# THE BRICKBVILDER

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## THE BRICKBUILDER.

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## THE LIBRARY COMPETITION.

ANNOUNCEMENT.

THE work of the Jury of Award for the Library Competition was not completed (nearly three hundred designs were submitted) in season to permit of the results being published in THE BRICKBUILDER for this month. The prize winners will, however, receive due notification about the first of the year.

The prize-winning designs, with the criticism of the Jury of Award, also some twenty-two other designs which are considered especially interesting, will be published in a special number, which will be issued during the month of January.

## THE ARCHITECT'S FEE.

The portion of Mr. Waid's paper published in the current issue which deals with the subject of architects' compensation touches a very tender spot in the professional feelings. As will be seen by reference to this article, there is a considerable difference in actual practice. If all could take the frank, outspoken position assumed by Mr. Flagg, who claims that everything going to produce a building should be under his direction, we imagine there would not be much difficulty in speedily establishing a uniform rate of considerably more than five per cent for the architect's work, including expert advice. But architects are by no means of accord in claiming as one of their functions the supervision of expert work, and some even maintain that the electrical, structural and heating and ventilating work are such matters of pure engineering that, in consideration for the client's best interests, the architects should let them alone entirely. With such diversity of opinion there is naturally a corresponding difference in practice. It is, however, a pretty well established custom among the architects having a large practice to charge more than five per cent for work involving technical difficulties. It is interesting to compare this condition with that which existed not so very long ago in this country, when the majority of even the best architects thought they were doing well if they received an unchallenged five per cent, and measured in the light of what is now expected of them professionally they were indeed highly paid for their services. It must not be supposed, however, that the conclusions stated in Mr. Waid's article represent the custom of the average modest practitioner. There is a theory that the very best architect costs no more than the poorest; that since the rate is five per cent the client is sure in advance of exactly what his architect will charge. This is true only of those who are not blessed with a large business, or whose prominence would not rank them among the recognized leaders in the profession. It is one of the prerogatives, if we may so term it, of the successful architect that clients want him and are willing to pay his price. So that when a client carries a ten or fifteen thousand dollar dwelling to such an architect he may be called upon to pay ten per cent rather than five. If he feels he must have the best architectural advice the country affords he must pay an additional five per cent on his expert work; and if, having selected his architect from the top of the list, he desires that architect's opinion on such vital matters as decoration and furniture, these items do not go into the bill on the five per cent basis, but he is charged at least ten; when, if his architect had been more dependent upon small jobs and was a relatively unknown factor in national affairs, five per cent would probably have covered the whole. In other words, a high professional ability brings a distinct reward if in no more than that the architect who has won such position is free from any necessity of contesting his terms with a penurious client and does not have to do certain portions of the work at an actual loss to himself. We do not believe that under any circumstances can alterations or interior work of any magnitude be attended to by the architect with any profit to himself at less than seven and a half per cent, and ten is surely none too much for the varied responsibilities which he has to undertake. It has been claimed as one of the reproaches of the architectural profession that no matter how experienced a man might be or no matter how great his artistic ability, his fees would remain the same, but as we have just explained, this is only partially true.

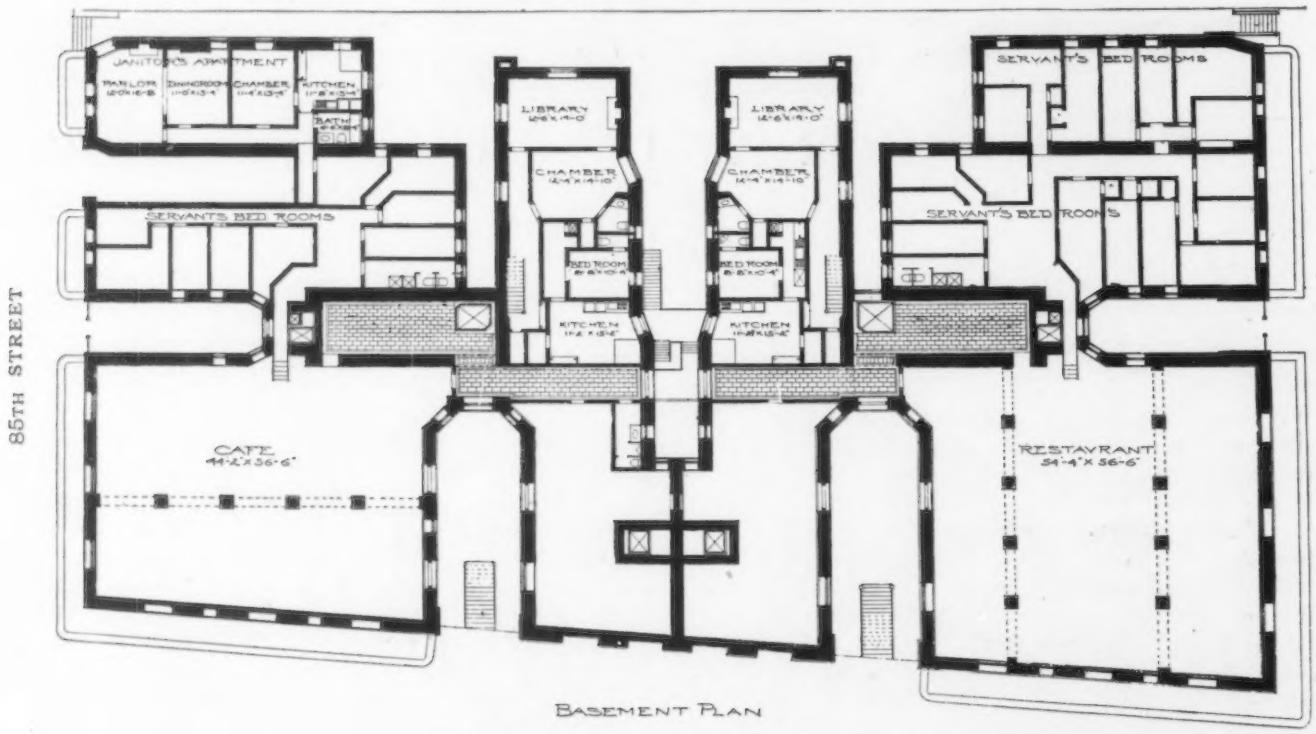
# The Planning of Apartment Houses. III.

BY WALTER H. KILHAM.

AN inspection of the appended plans of New York apartments, which may be taken as fairly typical of those lately erected, appears to show that the French idea of a large enclosed court fails of appreciation in the United States. In spite of the architectural advantage afforded by the enclosed court plan, it cannot be disputed that an apartment which possesses an outlook on the street and possibly has a bay window is far more attractive to the prospective American tenant than one giving only on a court, no matter how well designed may be the opposite wall, or how well the rooms may come "on axe." Unfortunately for Art, apartment houses crevasses, marked alluringly "light and air" on the plans, while affording really neither illumination nor ventilation, involve the construction of a large amount of costly exterior wall with angles and curves, and fail of their purpose both in utility and cost. The indentations of the plans of many new houses are almost incredible.

It may be remarked that apartments badly lighted and ventilated, with long corridors and tasteless decoration, will never hold permanent tenants, but will steadily fall through the scale of social as well as physical deterioration, while one planned on sound architectural lines will often be as popular, if well located and managed, at the end of its thirtieth year as when first occupied.

In general, common defects in the present-day apartment houses of the middle class in New York are, long corridors to reach the living rooms caused by the attempt to make one elevator do the work for an entire large build-




BASEMENT PLAN

"EUCLID HALL," NEW YORK CITY.

are rarely regarded by their owners as anything but investments, and the tenant must be attracted by features to which he is accustomed and which he has, perhaps, long desired. No one wishes more heartily than the writer that for the good of our artistic well-being the long straight façades and charming interiors of Paris might be substituted for the restless and indented fronts of many American buildings; but as a matter of immediate return on the investment the implanted tastes of the public must be met, even if these tastes happen to be astray. In the matter of interior courts the writer does not believe these tastes to be astray. The courts of most French apartment houses are certainly dismal enough from the point of view of sunlight, and on account of their greater height, those of our buildings would be worse.

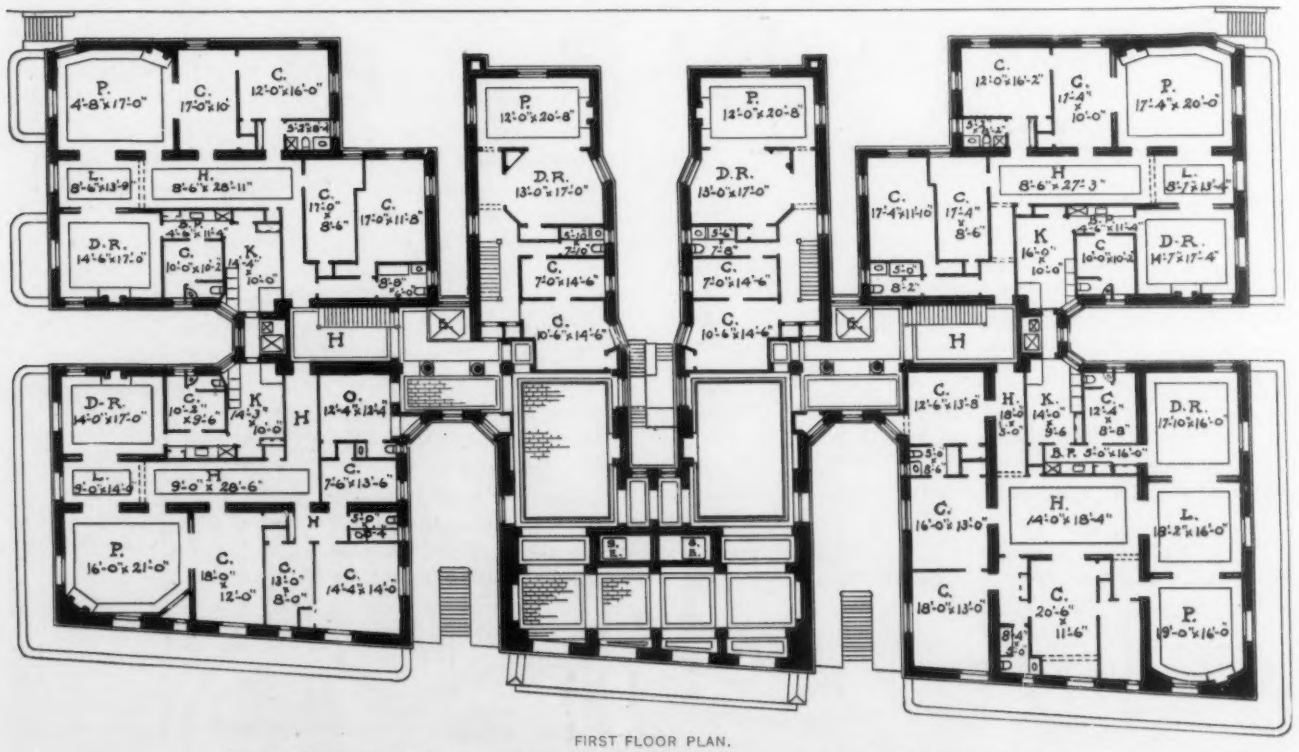
When the lot is sufficiently large, however, the courts should by all means be massed. The narrow and dark ing; small size of rooms and insufficient means of egress, one interior stairway only being provided, which is frequently poorly lighted. No matter how fire-resisting the building, stairways and elevator shafts may be choked by the smoke from a slight blaze with disastrous results, and an exterior iron flight leading to the street through a basement passage is a poor substitute. At the same time it must be borne in mind that in many cases the requirements of the tenement house and other acts, however wisely framed for the protection of the poor, result in certain arrangements which are peculiar to New York, and the annexed plans of apartments in that city should be considered in relation to the ordinances governing areas and minimum dimensions for courts and air shafts. The "dumb-bell" plan, previously referred to, appears to be a direct outgrowth of these conditions.

The plans of "Euclid Hall" are good examples of present-day planning on a large scale. The suites are

TYPICAL FLOOR PLAN.

exceptionally good in providing facilities for entertaining, the reception halls being almost large enough for dancing.

In the city of Boston comparatively few large housekeeping apartment buildings have been erected. A large number of blocks were built, most of the later ones on lines similar to Figure 1. Four stories was regarded as the limit at which they would rent readily without an elevator. The single or double unit plan was considered desirable from the owner's point of view, on account of the fact that when all the suites were once taken in a house it could be sold more readily than a larger building. As the chief end in the erection of many of these buildings was a quick sale, this was considered more important than either architectural effect or the comfort of the tenants. Moreover, the smaller the number of families



FIRST FLOOR PLAN.

Key to plans: B., bath. C., chamber. D. R., dining room. H., hall. K., kitchen. P., parlor.

"EUCLID HALL," NEW YORK CITY.

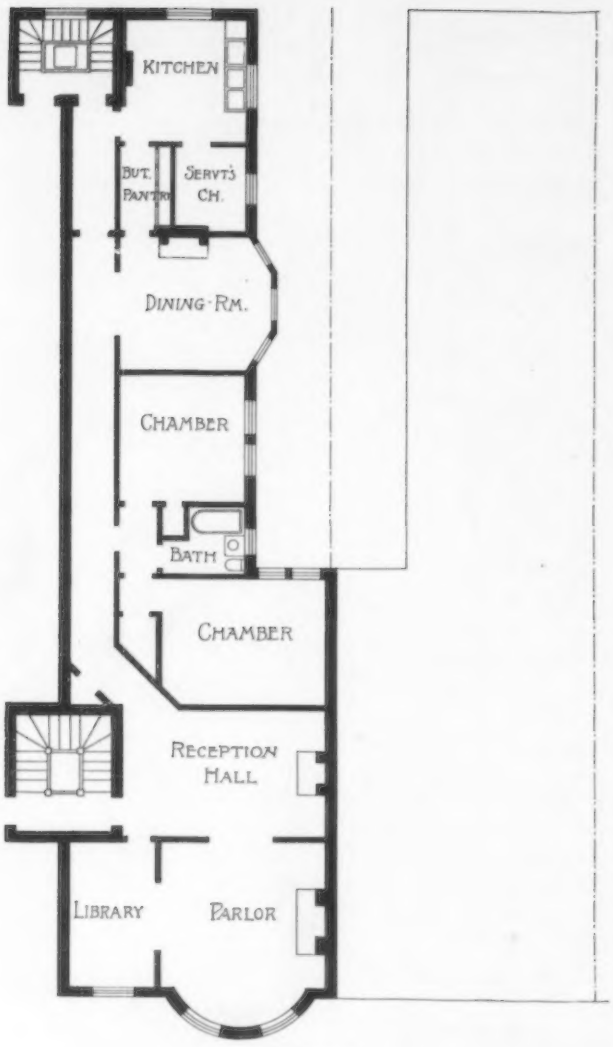


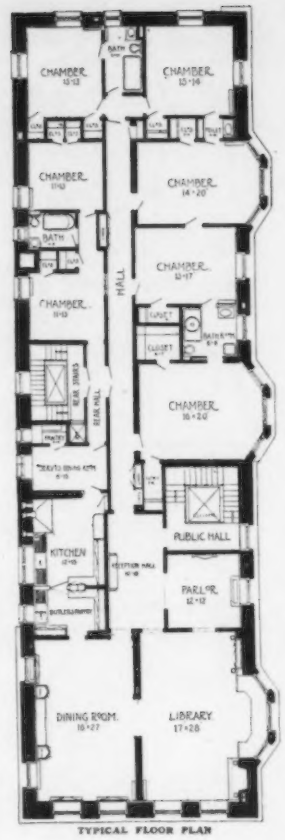

FIGURE I.

occupying the same building the smaller would be the chance of mutual disagreements and complaints. In some of these houses the kitchen is moved up near the center of the apartment, giving the rear outlook to the chambers. The newer apartments have, by force of the city ordinance, a well-lighted rear staircase (two staircases being obligatory), and the living rooms are almost always conveniently near the front entrance. "Real" fireplaces are generally provided for the living rooms and dining rooms, and the dumb-waiter runs in the rear stair well, which is built of brick, unfinished. The "fake" fireplace, which has no flue nor vent pipe, is not common.

In some the dining rooms extend clear across the apartment, thus saving the space occupied by the corridor, but obliging the servant to pass through it in going to the front of the house.

The equipments present little of interest and are generally far behind those in New York.

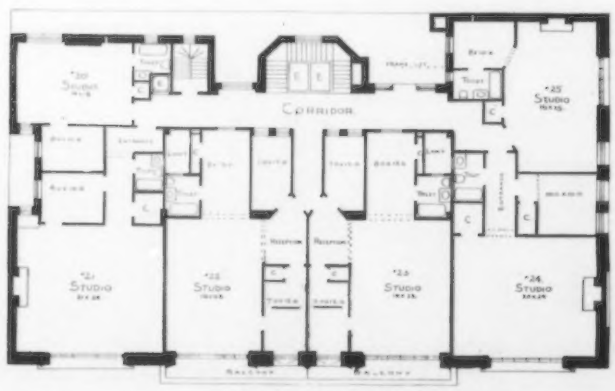
The annexed plans of apartment buildings in Chicago show interesting local variations in treatment. That of the "Raymond" is worthy of study, and that of the "Lessing" is novel in many ways, though the service entrances to the suites seem to be somewhat confused with the main corridors and passages to the bedrooms. As the building is only five stories in height, the apartments on the court would seem to be well lighted. The building contains a "banquet hall." The other plans show various treatments. Stress is laid by the managements of these houses on Flemish or "weathered" oak trim, burlap wall hangings (Lincrusta Walton in some) and fountains lighted through stained glass, and some advertise to keep the street in front swept at the expense of the house.



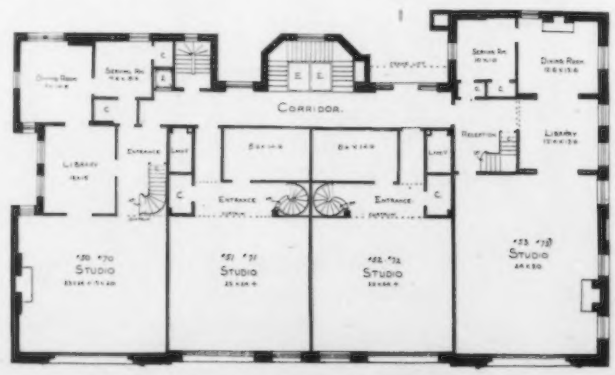

TYPICAL FLOOR PLAN

THE "RAYMOND,"
CHICAGO.

Another phase of the apartment-house problem is that of the studio apartments, which meet with a ready rental in large cities. The plans of the upper story of Trinity Court (see THE BRICKBUILDER for December, 1902) show

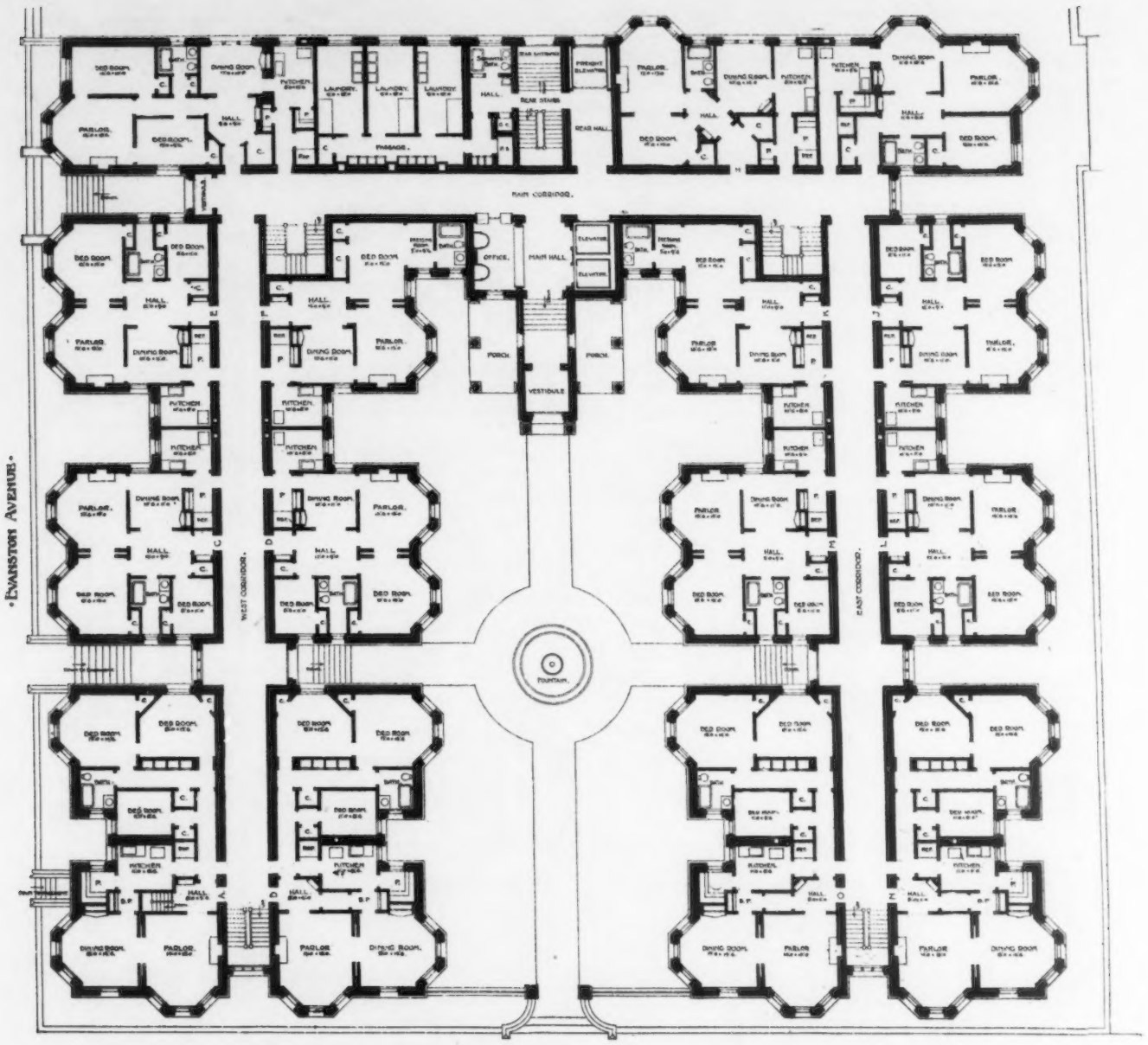



SECOND FLOOR PLAN.



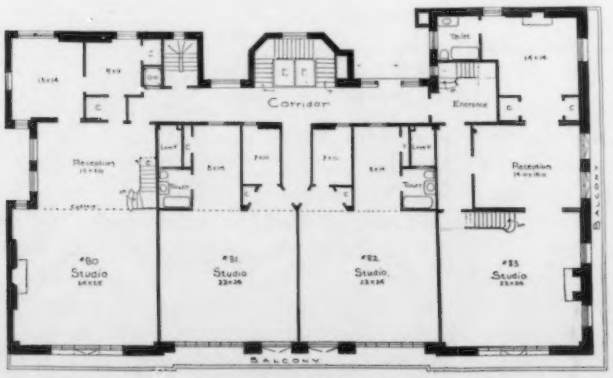

FIFTH AND SEVENTH FLOOR PLANS (WITH MEZZANINES.)

BRYANT PARK STUDIOS, NEW YORK CITY.

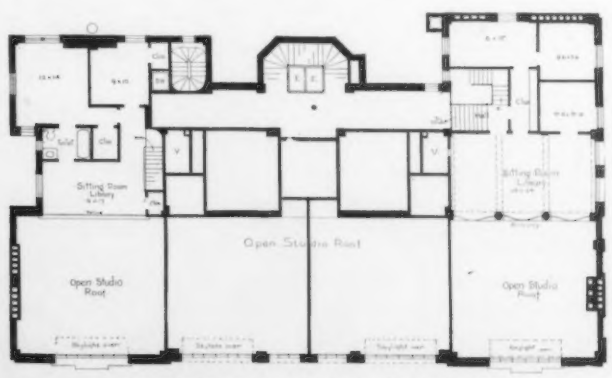



FIRST FLOOR PLAN, THE "LESSING," CHICAGO.

one arrangement in connection with a house devoted to regular non-housekeeping apartments. This house has a high sloping roof in which the studios are built, with large dormers for admitting the north light.




EIGHTH FLOOR PLAN.




MEZZANINE SIDE STUDIOS FOR EIGHTH FLOOR.

BRYANT PARK STUDIOS, NEW YORK CITY.

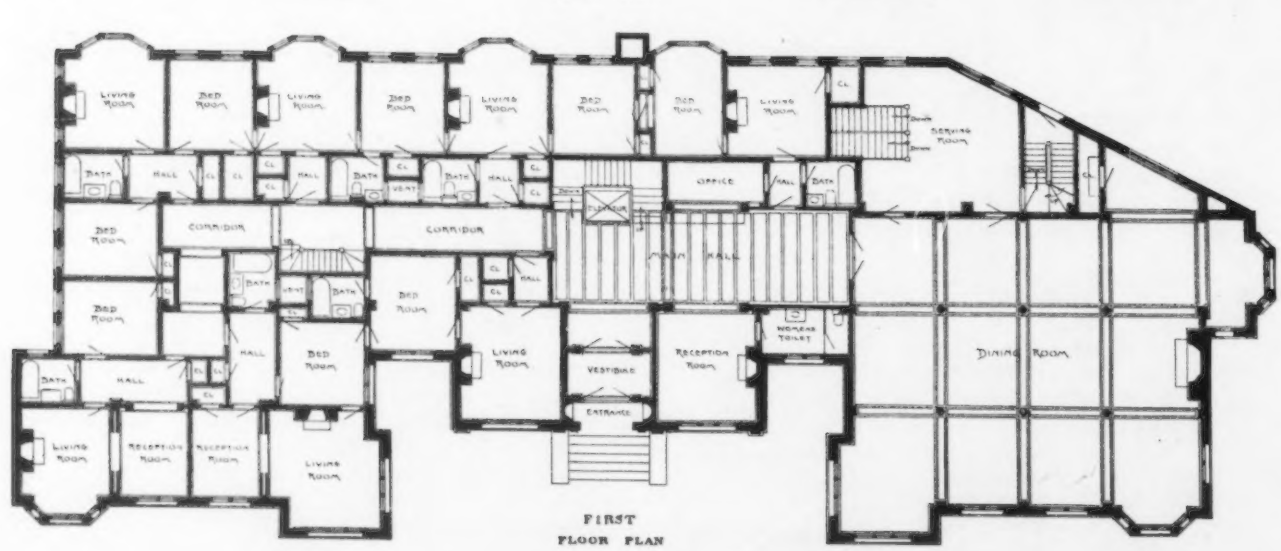
The Bryant Park Studios, Charles A. Rich, architect, in Fortieth Street, New York, is a good example of a building devoted to studio apartment purposes alone. A restaurant, called, appropriately enough, Café des Beaux Arts, occupies a portion of the ground floor and basement. Above the ground floor the stories are variously divided, with and without mezzanines, into suites of studios with bedrooms, baths and kitchens. The height of the studios runs from twelve feet and six inches to nineteen feet, but the first height is sufficient. The baths are ventilated by shafts. There are two passenger elevators and a large frame lift outside operated by hand power. A good-sized freight elevator is desirable in a studio building, and as much room as is possible in the basement should be allowed the tenants for storage of large frames and other bulky effects likely to be possessed by artists. Some of the apartments in the Bryant Park Studios are designed for light housekeeping and have small but convenient kitchens and pantries. A north light is much desired by many, though not all, artists, and a top light, which can be obtained in the upper story, will also be acceptable to some.

## THE SUBURBAN TYPE.

In the suburbs of large cities, where lower land values allow freedom from party walls, with possibility of admitting light on all sides of the building, another type of a house is being developed with much greater possibilities. These houses are generally three or four stories high and lend themselves to a more or less picturesque treatment, often with courtyards and gardens where the investment will allow it.

Richmond Court in Brookline, Mass., Cram, Goodhue & Ferguson, architects (see THE BRICKBUILDER for May, 1900), architecturally is one of the best pieces of work that has been done in this line. The suites are mostly of five rooms and bath, cosily arranged about a reception hall. The arrangement of bedrooms and baths is especially good. A charming garden with a fountain is arranged in the court. The plan of Hampton Court, adjoining, Charles E. Park, architect, shows a good arrangement of non-housekeeping suites, with quite spacious rooms, but with the bathrooms relegated to the dark interior portions of the plan.

Figure 2 is a type of house of which a very large num-




HAMPTON COURT, BROOKLINE, MASS.

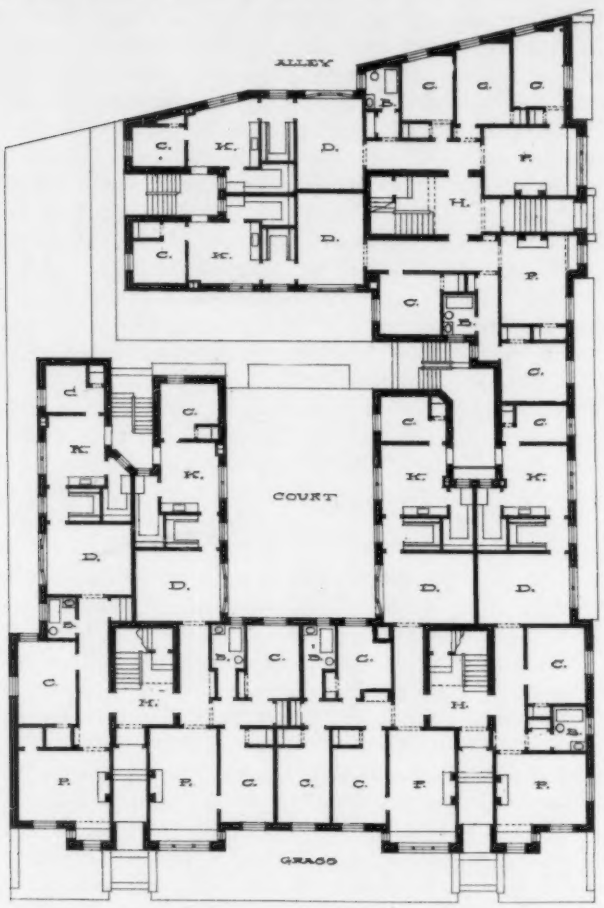
ber have been built in and around Brookline, Mass., usually on side streets. These houses are three stories in height and are wider than usual, allowing three good rooms to front on the street. The plan is worth studying, for it has proved very popular at low rentals.

Figure 3, Kilham & Hopkins, architects, is another type of small house, standing free, which rents readily at somewhat higher prices.

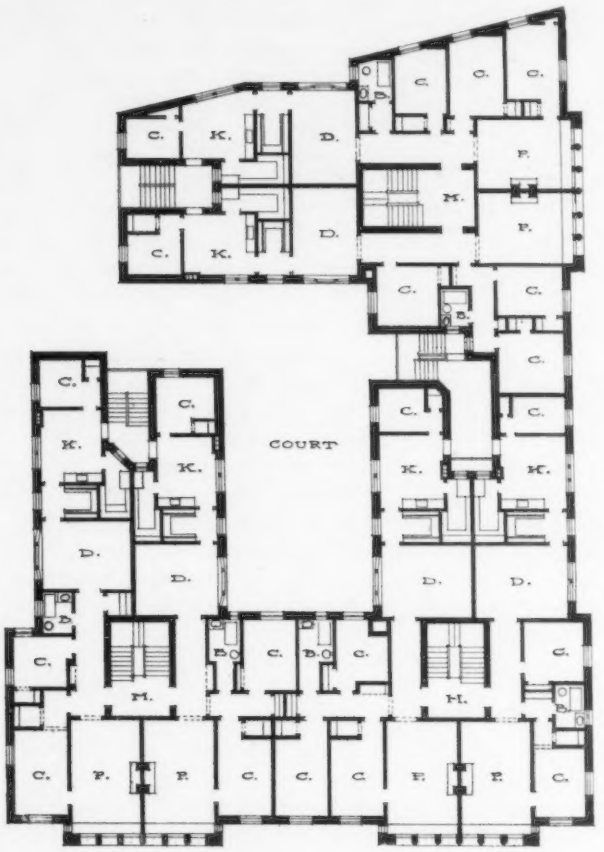
One more plan is subjoined, that of the Vonnoh Apartments, Chicago, James Gamble Rogers, architect, showing a good arrangement.

The plans published with these articles will serve to show in a general way the trend of American apartment-house planning at the present time. The fact of publication is not necessarily to be taken as a recommendation. It must be acknowledged that the bulk of apartment houses are not planned by architects at all, but are the work of speculative builders. The plans herewith shown, most of which are by architects of recognized standing, will serve to indicate to the prospective investor the desirability of intrusting his capital to trained and experienced hands, for, as was remarked above, a house planned on architectural lines will retain its standing long after the crude design of the contractor has fallen into disrepute.

*(To be continued.)*




FIRST FLOOR PLAN.




SECOND FLOOR PLAN.

Key to plans: B , bath. C., chamber. D., dining. H., hall. K., kitchen. P., parlor.

THE "VONNOH," CHICAGO.

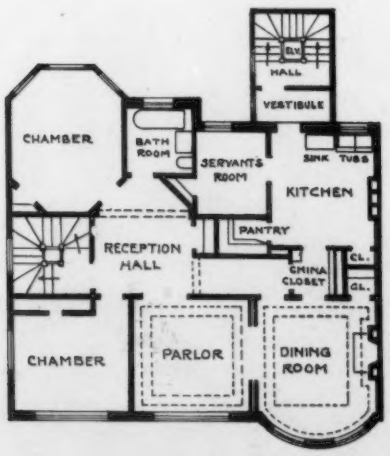


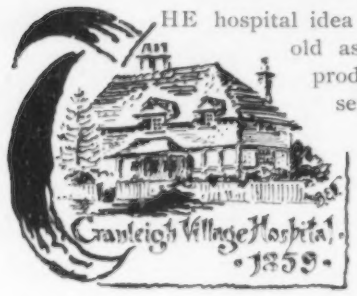

FIG. 2.

FIG. 3.

# Hospital Planning. I.

SUBURBAN HOSPITALS, SHOWING THE DEVELOPMENT FROM THE VILLAGE OR COTTAGE HOSPITAL.

BY BERTRAND E. TAYLOR.




THE hospital idea is literally almost "as old as the hills" and is the product of no clime and no sect. Many imagine that so-called Christian philanthropy is responsible to a great extent for the inauguration and growth of this most beneficent and praiseworthy movement; but although the greatest portion of the world's work in this direction is traceable to the "Good Samaritan" principle, the followers of Buddha and Mohammed, the ancient Greek, the Aztec and the Hindoo have all had their hospitals and their free dispensaries or medical service for the poor.

According to Burdett, the earliest known hospitals were those in Greece in the fifth century before Christ, although there were shrines in Egpyt some fifteen centuries before Christ that from their inscriptions were evidently used for hospital purposes. Dispensaries also were probably commenced at this time.

The mediæval hospitals were always administered by the church and were very broad in their scope. Even the "Hotel Dieu," founded in Paris in 600 A. D., was an inn, a workhouse and an asylum as well as a hospital or infirmary.

The church hospitals of to-day, with their central and dominant idea in the church or chapel, are along the same lines as the ancient prehistoric hospitals in which the temple was the hospital and the priests the medical advisers. Thus through all ages the church and the care of the sick have gone together, and complete separation is of quite recent date.

The village or small hospital movement seems to have been inaugurated about the year 1855 by Mr. Albert Napper, a surgeon in Cranleigh, England, under the name of a "village hospital."

It was a small affair of six beds installed in a cottage given by the rector and adapted, in a simple way, for its proposed use at a cost of fifty pounds.

The surgeon, in his practice, felt the great need of a specially arranged building for locally treating severe medical and surgical cases. The general management was placed in the hands of a committee and an active manager was appointed, who, with the medical officer, should be responsible for the details and report to the committee. An efficient nurse was placed in charge of the patients, and subsequently this branch of the hospital work was supervised by a ladies' committee. This general scheme of management is still followed by practically all small hospitals.

During the next seven years some fifteen village hospitals were established in England, all but two of which still survive, and one of these has been superseded by a larger hospital.

The fact that all these hospitals were established in cottages caused all small hospitals to be called cottage hospitals; and this name has been used until quite recently to designate a small hospital, whether installed in a cottage, a mansion or in a specially designed plant of several buildings. Many hospitals in America have been incorporated under the name "cottage hospital," causing much annoyance and complication later when the scope has broadened, as has almost invariably been the case in this country.

In England the village or so-called cottage hospital idea spread to all parts of the country, starting with the opening of one, and reaching in 1867 thirteen a year. The rapid growth after 1866 is accounted for in part by the publication at this time of a work on this subject by a Mr. Harris and Dr. Waring, a pamphlet by Mr. Napper and a "Handy Book of Cottage Hospitals," published in 1869 and 1870 by Dr. Swete.

The demand for more information on the subject became so great that Sir H. C. Burdett, the eminent hospital specialist, was induced to publish a small volume on Cottage Hospitals in 1877, in which he gives a list of about two hundred and eight cottage hospitals in operation in England.

The reported cost of some of these hospitals is of interest. The Bourton Hospital of eight beds, built of brick and tiles, but probably deficient in what we would consider necessary conveniences, cost £1,200, or $6,000.

One of the best and most complete English cottage hospitals of this period is that at Grantham, Lincolnshire, erected in 1876, at a cost of £5,344. It is of stone, has two wards for male and two for female patients of seven or eight beds each, in wings projecting from each side of the administration block. A small isolation pavilion, or, as they term it, a "fever hospital," of four beds in two wards, is on the same lot, also a separate laundry and mortuary. (Figs. 2 and 3.)

Although interesting as being at that time the best, it is severely criticised by Mr. Burdett and is manifestly inferior to his own model plan of 1877. The faults and deficiencies are so evident it is scarcely worth while to call attention to them; but the special points of interest are the block plan, showing a fairly extensive lot and the isolation of laundry and contagious hospital. This isolation department or, as they term it, the "fever block," is much better in plan than the hospital proper, and could scarcely be improved. This hospital cost £5,364, or $26,820. This Burdett model plan is exceedingly interesting in many ways. It is the typical plan still recognized as the most ideal, and that upon which practically all the best small hospitals of the United States have directly

or indirectly been based, as the relative position of the various departments cannot be improved.

The great size of the administration, compared with the pavilions and small bed capacity, is interesting to note, also the fact that the committee room is nearly as large as a ward. It is interesting also to note that the operating room has no accessories, and is itself only a lobby, or vestibule, to the surgical ward.

The location of the only bathroom, next to the kitchen, clearly suggests the crude ideas in plumbing possibilities of the day. The complete isolation of the sanitary necessities, the lavatory, the slop hopper and the water-closet are in line with the almost universal custom in Great Britain, a necessity in the early days of crude plumbing and no adequate ventilation.

It will be noted that there are no isolating or private rooms, no diet kitchens, no clothing or linen rooms, no nurses' room, no medicine closet or storeroom. But there is one feature that many fine hospitals lack, which is of the greatest importance, and that is an open-air veranda facing south, flooded with sunshine and protected from all cold winds.

Here, then, we find earliest types of the present-day suburban hospital containing the embryo operating department, simply a room, and the embryo pavilion, an open ward; no classification except the most general, viz., male, female and surgical, yet all that is possible in a very small hospital.

Mouat & Snell, in their work on Hospitals, publish designs of the Blackburn and East Lancashire Infirmary and an article in which they claim that this was the first hospital erected in England planned upon the pavilion principle.

Much has been written about it on this account, and also because of the location of the pavilions; but although interesting as the first of a type, it has been very severely criticised.

It was planned evidently about 1857, as the foundation stone was laid in 1858. The general block plan shows a very ambitious scheme for the day, but only a portion of it had been carried out up to 1882. The plan of the general pavilion shown herewith is principally interesting because it shows how very inadequate the general scheme as compared with the requirements of the present day. (Fig. 5.)

A very interesting plan of an early pavilion, consisting of a surgical ward with operating rooms, is that of the Nativity Hospital, St. Petersburg, Russia, built in 1877. (Fig. 6.)

It is constructed of logs, finished with tongued and grooved boards inside. The floors are generally of asphalt on a concrete base.

The operating rooms were designed to be used for separation wards for patients before and after operations.

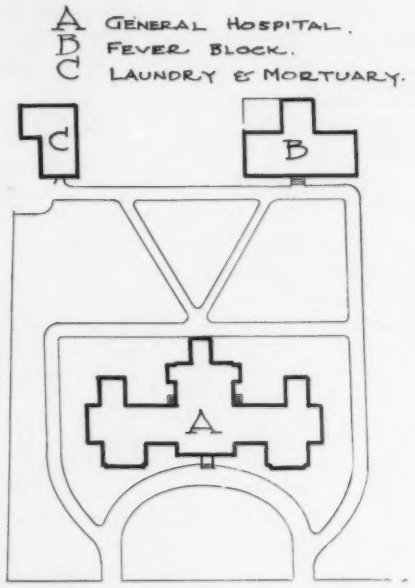



FIG. 2. GRANTHAM HOSPITAL, ENGLAND.
R. A. Came, Architect.

This building is a special pavilion in a group of fourteen, the others having been erected previously.

The first cottage hospital specially designed on the pavilion principle is Allhallows Hospital, Ditchingham, Norfolk. It has twenty beds and cost £3,000, and was completed in 1873.

An English authority on hospitals says that "the small hospital should have at least two wards for patients, a matron's room, sitting room, a medical officer's room or operating room, two bedrooms, a kitchen, a scullery and wash-house, larder, storeroom, bathroom, two water-closets, fuel house and mortuary external to hospital building." This certainly is a very modest schedule of requirements, and must apply only to the embryo hospital in its preparatory stage, in a cottage or small house. This same authority also remarks that "this adapted cottage, though in some districts all that is possible to obtain, is never wholly satisfactory, and in fact although good work is done it is always under great difficulties."

In England these little institutions have continued in active operation all these years, and, probably on account of the stationary character of the population, have seldom been replaced by larger, specially designed buildings.

Our experience in America is that the demonstration of the great value of service rendered by a hospital in a specially fitted private house results, in a few years, in a substantial sum being raised by voluntary subscription and a new, specially designed hospital of several buildings on as ideal and ample a lot as is obtainable.

In my rambles about the old country I have found many so-called hospitals of very early foundation that were extremely interesting artistically, but of little value as hospitals, for on investigation they generally proved to be homes for old people or orphans; and although sometimes having an infirmary, embody otherwise none of the special features or accessories of a hospital, as we understand the term to-day. These beautiful old hospitals serve to illustrate the fact that the word "hospital" has come to mean an entirely different institution, performing a very different mission, than was expected in the early days.

In many of these most interesting old structures the great size and relative importance of the chapel or church, and the small size and retired character of the infirmary, lead one to think that the chief aim of the founders was ministering to the soul rather than to the infirmities of the body. The name "hospital" is, however, amply justified by the hospitality dispensed daily both to native and to stranger; so that even to-day, after centuries of generous giving, the pilgrim, though he be from over the sea, can get his "horn of ale and dole of bread" as of yore, long before the day of public houses.

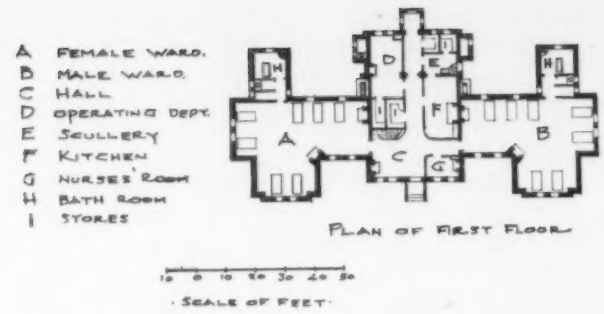



FIG. 3. GRANTHAM HOSPITAL. WARDS ARE ONE STORY ONLY. CONVALESCENT ROOM, FOUR CHAMBERS AND STORAGE IN SECOND STORY.

The Leycester Hospital, Warwick, established by Lord Dudley in 1571, is a most beautiful quaint old half-timbered building of great antiquity. Bablake Hospital and Ford's Hospital in Coventry are delightful bits of sixteenth-century work and most interesting types of the so-called hospitals of early times. The most interesting and beautiful country hospital of this class I ever visited is the Hospital of St. Cross, situated a mile or so outside the ancient city of Winchester, England. This "hospital" was founded away back in 1136 by Bishop Henry DeBlois, and consists of a number of buildings of great interest. The infirmary is not now in use, but the other portions are still occupied evidently as intended by the founder.

The lessons these ancient buildings teach are many, even if their utility as twentieth-century hospitals might be questioned. They suggest that a well-built, beautiful building will sometimes be allowed to endure for ages, and in order to insure this the founders in many cases took good care to liberally endow the institution. The present-day tendency is for a rich man to furnish the money for a fine building or institution, giving it his name, and then to leave it to take care of itself, totally ignoring the fact that quite frequently the burden of the maintenance is wholly beyond the resources of those in charge.

The old builders "builded better than they knew" in many ways.

The desirability of local hospitals in the smaller cities and towns in America was evident very soon after their demonstration in England, but there were very few or none built before 1870. In the year 1878 there were, as nearly as can be ascertained, some four hundred and fifty hospitals all told in America, and this figure will undoubtedly cover all institutions of an analogous nature. These were almost all, except the asylums and insane hospitals, in the cities and large towns and were at the time considered large hospitals.

Between 1880 and 1890 a large number of hospitals were incorporated and started, most of them in a small way, but all of them inaugurating a most noble and greatly needed work, calling for a development of the highest and most humanitarian qualities of citizenship.

According to Burdett's "Cottage Hospitals," edition of 1880, there were at that time in Boston some fifteen hospitals with accommodations for about one thousand patients, and in the rest of the state, exclusive of those for the insane and those belonging to the naval and marine services, but eleven hospitals, aggregating about two hundred and forty beds. All of the hospitals were in cities of from twelve thousand to fifty thousand inhabitants, therefore there were none of a distinctly rural or suburban character. Of the eleven Massachusetts hospitals there were —

6 in remodeled dwellings,
2 in dwellings not remodeled,
2 in specially designed brick buildings,
1 in a specially designed wood building.

This latter, the first American cottage hospital, was the "House of Mercy" at Pittsfield, Mass. It was opened in a frame dwelling, January 1, 1875, and was the direct result of visits to England and a careful study of the successful work then well under way.

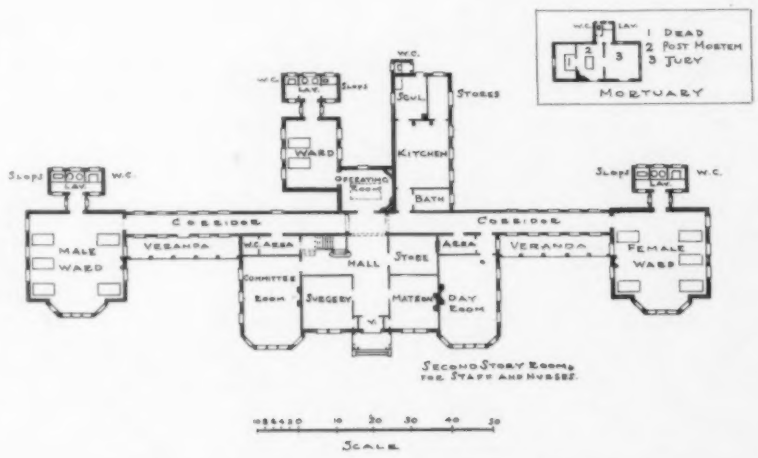


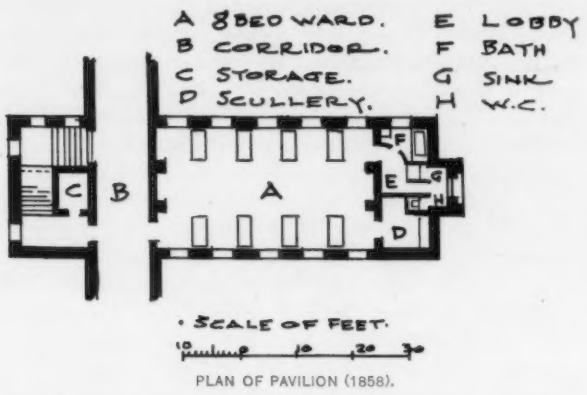

FIG. 4. SIR H. C. BURDETT'S MODEL PAVILION OF 1877.

The capacity was eight beds, and it was used for three years. In 1877, being convinced of the unsuitable character of the building, location and soil, a lot of three-quarters of an acre was purchased and a new specially designed hospital of thirteen beds, arranged for extension, was built and opened to the public January 15, 1878. This new structure consisted of two small two-story wooden buildings connected by a corridor. There were no open wards, each patient having a separate room. The smaller building contained the administration and service, also an anomaly in the shape of an isolated ward for contagious cases. The entire cost is given as $9,500, one thousand dollars of which was for the lot. (Figs. 7 and 8.)

This, in brief, is the small and humble beginning of a great movement that has spread to all parts of the land until now there are very few towns of any size that have not a better hospital than the only one of its class twenty-five years ago.

The vital principles of small hospital construction were well understood a quarter of a century ago, as we see in Dr. W. Gill Wylie's very comprehensive essay in competition for the Boylston prize, published in 1876.

Dr. Wylie advises the absolute isolation of the ward unit to a degree not adopted, as far as I know, in any modern hospital. This comprehension is also shown in H. C. Burdett's schedule of desirable points, which have evident reference to fever or isolation hospitals, but which




PLAN OF PAVILION (1858).

FIG. 5. BLACKBURN AND EAST LANCASHIRE INFIRMARY.

are well up to the ideal practice of to-day and are, I think, well worth copying as a very short and consequently very general schedule of requirements, namely:

"1. Accessibility of situation, so that the sick may not be exhausted by long journeys; wholesomeness of situation; and, as far as consists with these conditions, an open, uncrowded neighborhood.

"2. Adequate ward space for each patient, approaching as nearly as circumstances allow to 2,000 cubic feet, with a floor space of not less than 144 square feet.

"3. Thoroughly good provision for ward ventilation (*i. e.*, for sufficient unceasing entrance of pure air and of exit of ward air), with arrangements also for immediate change of air in the whole ward when necessary.

"4. Perfect security against the possibility of any foul air (as from privies or sinks) entering any ward.

"5. Means of warming each ward in winter to a temperature of 60 degrees Fahrenheit and of keeping it cool in summer.

"6. Safe means (safe both for the hospital and for the neighborhood) for disposing of excremental matters and of slops and for cleansing and disinfecting infected linen and bedding.

"7. Facilities for obtaining in the use of the hospital the very strictest cleanliness in every part."

The causes leading to the establishment of hospitals in the towns and villages of America are the same as those dominant in England, and are suggested very clearly in No. 1 of the schedule above. The rich could be sent to the cities to the great general hospitals or to the private hospital of some renowned specialist; or, in many cases, the specialist visited the wealthy patient in the home of comfort if not of luxury, and a portion of the residence was for the time transformed into a fairly successful hospital ward. The mass of the people were, however, debarred from either of these possibilities, involving the expenditure of hundreds and sometimes thousands of dollars, and the result was suffering and death and needless spread of disease.

Humanitarians, professional and non-professional, the family physician and the family minister or priest welcomed the news that small hospitals were possible, and here and there set to work to interest good men and women in the new work for humanity.

The history of all such movements is very similar. In very rare cases money was furnished by some philanthropist and a complete new hospital built, but this was very unusual. In practically all cases a very small beginning was made by a few; an organization effected resulting in an incorporation, a little money raised or pledged, and a start made in a small house hired for the purpose. The scheme was usually regarded as an experiment, and the people had to be slowly educated up to the hospital idea by practical demonstration.

A few years ago the people generally regarded the hospital as a last resort, a place in which to die, a place of suffering, and not to be thought of except of necessity; and there was good reason in many cases for this feeling. All this had to be changed and it has been changed, but it has taken a great deal of hard work and much time to effect this change.

The cottage or the mansion first devoted to the hospital use, however crudely adapted to its new mission, has been invariably successful in demonstrating the great value of the hospital service to the community. This house, large or small as may be, has soon become inadequate to the demands made upon it, and additions and improvements are made from time to time.

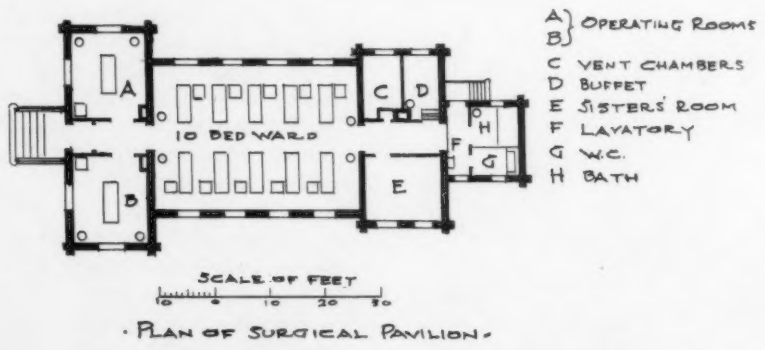



FIG. 6. THE NATIVITY HOSPITAL, ST. PETERSBURG (1878).

In many cases a few years' demonstration has resulted in donations of various amounts, aggregating generally many thousand dollars, enabling the corporation to buy a large lot as ideally located as possible, and to start the nucleus, at least, of a new hospital plant of several buildings, providing for the most perfect classification possible in a small institution.

Dr. Alfred Worcester of Waltham, Mass., published in 1894 an admirable little treatise on Small Hospitals, a valuable work for all interested in the organizing of a small hospital. In it he emphasizes the great need for hospitals in all small towns and villages, and shows that the isolation of the sick, the special advantages of a local training school for nurses, which every hospital, however small, should have, and the great advantages to the local medi-

cal practitioners in being able to place their patients where they can be treated under the most ideal conditions, are of vital importance to the community.

(*To be continued.*)

FIG. 7. FIRST FLOOR PLAN, THE HOUSE OF MERCY.

THERE is one point which Mr. Waid brings out which ought to be insisted upon. The general custom has been for the architect to receive his first payment of one-half of his total commission when the contract is signed. The plan adopted by the United States Government and by the trustees of the Carnegie Libraries in New York and Brooklyn, of paying one per cent when the perliminary studies are completed, ought to be insisted upon by

FIG. 8. THE HOUSE OF MERCY, BOSTON, MASS. (1874).

every architect. Furthermore, as recommended at the last convention of the American Institute of Architects, an additional two-fifths of the whole commission ought to be paid when the drawings are ready for a contract or within thirty days therefrom. The architect is now practically called upon to advance a large sum of money for the preparation of the drawings, and this constitutes a very heavy load from which he ought to be relieved.

# The Business Side of an Architect's Office. VII.

BY D. EVERETT WAID.

## ARCHITECTS' CONTRACTS AND FEES.

IN reference to question nine, "On the desirability of charging clients, in addition to the regular fee, five per cent on sanitary, heating and electric work to cover expert service as recommended by the American Institute of Architects," Ernest Flagg has stated to the writer that he never charges less than five per cent for his work, whatever its character or magnitude. On the contrary, he regards five per cent as too low compensation, and believes very strongly that the profession should endeavor to increase the fee to seven and one-half per cent. Mr. Flagg opposes emphatically the employment by the client of engineers or other experts; everything that goes to produce a building should be under the direction of the architect. Moreover, all experts and engineers should be employed and paid by the architect. A client does not want to be annoyed with charges for extra items like blue prints, five per cent additional on the heating contract, another five per cent for electrical engineering, etc., but would rather pay a fixed rate on the total cost of a building. Mr. Flagg believes in this position so firmly that even when he is getting no more than five per cent on a piece of work he pays his own experts and under ordinary conditions does not even ask his client to pay traveling expenses. He stated that during one series of four years when his executed work exceeded a million dollars per year, his actual office expenses had amounted to three and eight-tenths per cent.

Mr. Post takes a somewhat similar stand in the matter of charging for experts' services. He has a sanitary engineer in his office, has a standing contract with a firm of electrical engineers to do all his work in that line for a fixed percentage, and employs special engineers who come into his office and work with his own draughtsmen, designing the heating and ventilating apparatus so that it may become an intimate and harmonious part of the structure of the building. On the great Stock Exchange building, recently finished, in which the heating and ventilating apparatus cost an unusually large amount, he paid the heating engineer five per cent on that amount and himself received ten per cent plus five per cent on the engineer's fee. In other words, the engineer is paid by the owner on the architect's certificate in the same manner in which contractors are paid. But under ordinary conditions Mr. Post considers that the architect should furnish at his own cost all skill needed in designing, heating, plumbing and electrical equipment.

McKim, Mead & White, on the other hand, strongly oppose this attitude and make it their practice to charge an additional five per cent on heating and electrical work (if not always on plumbing) for all buildings of importance, and they cite a long list of structures, including the Brooklyn Institute of Arts and Sciences, Columbia University buildings, etc., etc., on which the clients have paid ten per cent.

It is the custom of the office of Carrère & Hastings to charge to cover expert fees in like manner.

Shepley, Rutan & Coolidge write: "The majority of our clients pay ten per cent for expert work, others seven and one-half per cent."

One well-known firm writes in regard to charging for expert fees: "This depends on circumstances, but it should be only in exceptional cases."

Holabird & Roche say: "We have our own departments to cover the sanitary, heating and electrical work, and expert services in these lines is included in our regular fee."

A Pittsburg firm of high standing remarks regarding this ninth question: "Very desirable, but difficult."

Cass Gilbert writes: "I believe the architect is entitled to such additional fee."

A Cincinnati firm replies thus: "We believe here, as a rule, the architect's commission covers expert service for special lines, though the American Institute of Architects' recommendation will in time prevail as the value of expert service becomes more recognized."

A Chicago architect of long experience discusses the matter as follows: "In regard to charging clients five per cent extra on sanitary, heating and electrical work, we have recently added this provision to our schedule of charges, but have not had time to get it in working order. We consider that the five per cent is too small a charge for the average run of work. Buildings have increased greatly in complexity since the schedule of the Institute was adopted, and the cost of making plans is thereby greatly increased. Such a relief as would be gained by an additional percentage on these items is needed by the profession, and if it cannot be secured from the public, then the percentage of charge on the building as a whole should be increased."

A number of Boston architects whose attention has been drawn to this matter of expert service agreed that Mr. Wheelwright has stated the case fairly in his book on School Architecture, in which he treats it as follows:

"An architect should be expected to so plan a building that radical changes in construction are not required to admit the satisfactory installation of a system for heating and ventilation, but few architects have had the technical training coupled with the experience which warrants them in designing such a system without consultation with an engineer whose interest in the work is not commercial. Where a system has been almost paralleled in a former building constructed with such expert assistance, an experienced architect, if he has an honest and competent contractor, may accomplish a fairly good result, but even under such condition the work would generally be brought to a nicer conclusion if an expert were employed.

"Where a competent expert makes the plans and specifications and supervises the construction of such a system, all competitors for the work are put upon an equal footing, and the expert's compensation will be offset to the owner, if not by the first cost, certainly by the greater economy in running and maintaining the plant and its greater efficiency above that of a system installed by the lowest commercial bidder who uses his own plans and specifications. Expert service is rendered primarily for the client's benefit, and if a client is unwilling to pay for such service, the choice of a system based upon commercial competition is all that he can fairly expect his architect to furnish."

Turning now to questions

"6. Observations as to the practice of submitting drawings without compensation in the hope of securing work;

"7. On entering competitions without compensation;

"8. On entering competitions in which prizes are offered."

One answer from a firm of long experience in the West is this: "We never enter a competition unless guaranteed pay for our designs. We do not consider a prize as any inducement. We refuse every competition, unless we are guaranteed a definite cash payment for our plans, whether used or not."

Another writes: "We seldom go into competition any way, and where for special reason we do enter them, we always insist that some kind of prize shall be offered and that some competent judge shall decide the question."

One of the best-known firms in the country takes this attitude: "We submit drawings when requested, without compensation when not in competition. We do not enter competitions unless paid for our service."

A New England architect writes on submitting drawings without compensation: "It depends on what the service is, and should never be done for the sake of getting work away from another."

Holabird & Roche say: "We do not enter competitions without compensation."

A St. Louis firm, Mauran, Russell & Garden, states: "We have not entered competitions of any sort during the last few years, previously having confined ourselves to those offering compensation. We consider competitions, broadly speaking, of little if any value to the client and a waste of time and money to the architect."

C. F. Schweinfurth expresses his belief that "submitting drawings without compensation is common practice, but it should be discouraged in every honorable way. It is what some people call 'business,' so also is entering competitions without compensation, or where prizes are offered called 'business,' but both methods are entirely foreign to the honorable practice of a profession."

Babb, Cook & Willard answer the questions thus: "We do not enter competitions without compensation except in the case of work for the Treasury Department, and we trust this exception will not long exist. We do not enter competitions in which prizes are offered unless there is also compensation."

Cass Gilbert says: "I do not enter competitions without fixed compensation, nor unless the organizer of the competition is advised by an expert architect. . . . The practice of submitting drawings without compensation, in the hope of securing work, should be discountenanced."

Eames & Young answer question 6, "no, no, no;" question 7, "never;" and question 8, "never."

Another architect writes: "The practice of submitting sketches without compensation is demoralizing, to say the least, though quite common."

Let us close this chapter of various considerations on architects' fees by reverting to the matter of architects'

supervision. Important precedents are now making in this connection which demand the attention of the profession. The United States government seems inclined to take the ground that it is proper to allow an architect three and a half per cent for his services exclusive of supervision, and to turn that important function over to government engineers. Thus would architects find themselves in the humiliating position of being held responsible for good buildings while without authority in the execution of their designs. The question came to issue in connection with the Agricultural Building for the government at Washington. Lord & Hewlett won the commission through a competition, but when a contract for partial services was submitted for their signature they declined to sign except on the following conditions:

"1. That it shall provide that we shall certify to the proper performance of the work in accordance with our plans and specifications.

"2. That we shall provide such superintendence as is necessary to such certification.

"3. That our remuneration shall be a sum equivalent to five per cent on the total cost of the work."

Lord & Hewlett may suffer for taking such a stand, but they realized that a vital principle is at stake and that not a mere loss of a few dollars was in question, but a precedent which may become of far-reaching importance to the profession. If the government chooses to sublet contracts and places the army engineers in charge, they can do the superintendence which belongs to general contractors most effectively; but they must work under the direction of the designer of the building or an elemental mistake will have been made. The above-noted instance and others of recent date have called the attention of the profession to the misapprehension of the Institute schedule in its old form, and hence the adoption of a new phraseology at the convention in Cleveland lately.

Every architect has occasionally to make a special contract for partial services, leaving supervision to others; but his schedule should give rates for partial services, only for the purpose of fixing time of payments due himself or to cover the contingency of abandonment of work. He should guard carefully against giving his client the option of dismissing him after drawings are made and at will, assuming to himself the supervision of execution, or placing it in the hands of outsiders.

(*To be continued.*)

## PHŒNIX HOLLOW TILE WALL CONSTRUCTION.

A CORRECTION.

IN our last number, describing the Phœnix Hollow Tile Wall Construction as used in the construction of the tank house for the American Smelting and Refining Company, by an oversight the vertical I beams were stated to be sixteen inches on centers. This should have been sixteen *feet* apart. Henry Maurer & Son write us that such large beams are not necessary for walls of only four inches thickness, and as we stated in the summary of cost, for a four-inch wall the uprights need be no heavier than six-inch I beams every fifteen feet, as in the building for the Barber Company illustrated.

# Fireproofing.

## "NEW YORK" REINFORCED TERRA-COTTA FLOOR ARCH.

ALTHOUGH terra-cotta arches have been in use many years and numerous patents taken out on so-called improvements, there have been few departures in practice from the ordinary flat, side or end construction and segmental types.

The segmental arch is the strongest and cheapest for a given weight, but it cannot be used under conditions where a flat ceiling is indispensable.

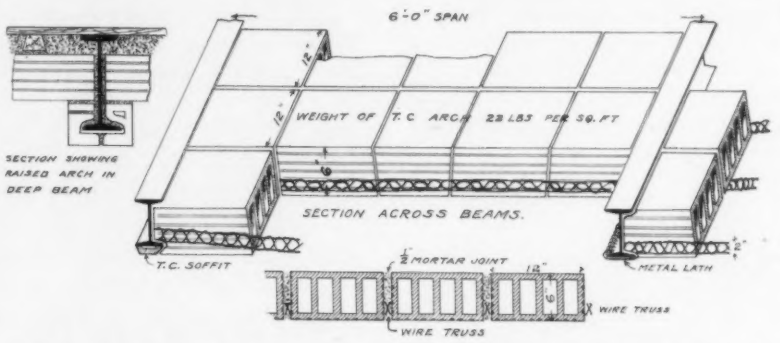
For a number of years the New York Building Department has limited the width between "I" beams in fireproof floors to about six feet. The Building Law required the depth of all hollow-tile floor arches to be one and one-quarter inches for each foot of span, and not including the

"NEW YORK" REINFORCED TERRA-COTTA ARCH, SHOWING PILE OF BRICK EQUAL TO SIX HUNDRED POUNDS PER SQUARE FOOT OVER ARCH SIX FEET BY FOURTEEN FEET, CARRIED BY THE ARCH AFTER THE FIRE AND WATER TEST. NOTE CRACK IN TEST HOUSE WHICH CAUSED THE SPREADING OF THE BEAMS.

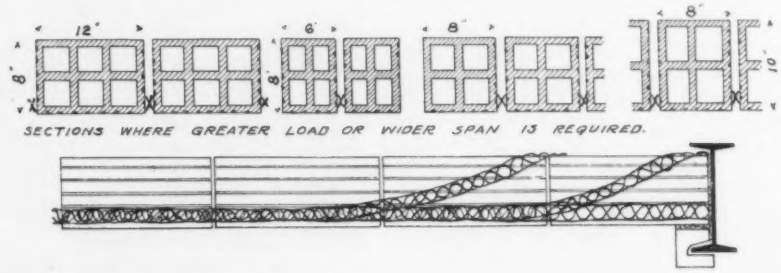
projection below the flange of the beams. This allowed the use of an eight-inch arch in a six-foot span. Such an arch of light section, side construction, is good for a live load of one hundred pounds per square foot with a factor of safety of seven, or one hundred and seventy pounds if of end construction. There never was a failure of such an arch if properly set, so that theoretically and practically nothing more was required; but when the General Building Law was revised a few years ago, the law was changed to read one and three-quarters inches instead of one and one-quarter inches, making the conditions more favorable to reinforced concrete construction than to terra-cotta. This change necessitated the use of a twelve-inch terra-cotta arch in a six-foot span, even though only seventy pounds per square foot live load would be carried in a dwelling or hotel. This meant a loss of about four inches of ceiling height on each story, besides greater weight of steel to carry the unnecessary dead weight in the floors.

To overcome these disadvantages in the use of terra-cotta arches and to meet the competition of cheap and light so-called fireproof floor constructions, and at the same time to give a floor that is fireproof, P. H. Bevier, an engineer, has designed a new type of arch, which the National Fireproofing Company has recently put upon the market.

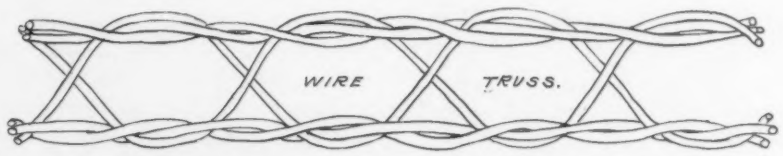
On the twenty-third of November the representatives of the various bureaus of buildings of the boroughs of Greater New York met at the Perth Amboy factory of the company to make the official fire and water test of the six-inch flat arch which had been erected twenty-eight days previously under the direction of the representative of the Department of Buildings. The test house was built of twelve-inch brick walls fourteen feet by fourteen feet by nine feet six inches high from the grate bars to the underside of the arch. The arch to be tested was six feet wide by fourteen feet long, built in the center of the house, with a narrower arch on each side, and loaded with one hundred and fifty pounds of brick built in detached piers. At twelve o'clock noon the fire was started, using pitch pine and hard cord wood, and an average temperature of 1730 degrees Fahrenheit maintained until four P. M. At the end of the four hours of fire a stream of water under sixty pounds' pressure at the pump and thrown from a one and one-eighth inch nozzle was directed against the red-hot underside of the arch for five minutes. The top of the arch was then flooded for five minutes and the drenching from beneath repeated for another five minutes. The arch was then allowed to stand over night.




ABOVE ARCH ACCEPTED BY NEW YORK BUILDING DEPARTMENT FOR LIVE LOAD OF ONE HUNDRED AND FIFTY POUNDS PER SQUARE FOOT.




HALF SECTION THROUGH WIDE SPAN ARCH, SHOWING USE OF MORE THAN ONE PIECE OF WIRE TRUSS TO GIVE GREATER STRENGTH IN CENTER AND PREVENT SHEARING OF BLOCKS AT ENDS OF ARCH. DEPTH OF BLOCKS, NUMBER OF TRUSSES AND SIZE OF WIRES ARE PROPORTIONED TO LOAD AND SPAN.




"NEW YORK" REINFORCED TERRA-COTTA ARCH (BEVIER PATENT).

The next morning the load on the arch was increased to six hundred pounds per square foot over the entire surface, using hard brick built in isolated piers one foot by two feet, so that they did not bond, and carried thirty-four courses high, or to a height of six feet eight inches. The twelve-inch "I" beams deflected about three-fourths of an inch under the heat and load, while the center of the arch deflected about one inch. The deflection of the arch was largely caused by the cracking and spreading of the top of the fire house, allowing the beams to spread and the arch to sag. This cracking is clearly shown in the illustration. The underside of the arch blocks was somewhat checked by the sudden contraction caused by the stream of cold water, but the strength of the arch was not seriously affected by the ordeal through which it had passed, as was shown next day when the six hundred pound per square foot load was carried without further deflection.

The arch as tested by the Building Department consists of six-inch flat terra-cotta end construction blocks weighing twenty-two pounds per square foot, with no middle horizontal cross web, each block having four cells.

The metal reinforcement is in the form of a wire truss, the upper and lower chords being composed of two No. 13 galvanized twisted wires and the diagonal members being single No. 14 wires.

Being embedded in Portland cement mortar the wires are preserved from rust, and being enclosed in terra-cotta they are protected from the heat. The lower chord is about one-half inch above the bottom of the arch. The advantages of this style of tension member are:

*First.* It can be made cheaply by machinery now in use.

*Second.* It gives a perfect mechanical grip to the mortar as well as the adhesion of cement to the wire.

*Third.* When the wires are bedded in the mortar the compression members are kept from deflecting under pressure, so that it becomes a true truss and acts as a beam in itself as well as a tension member in the arch.

*Fourth.* It is conveniently shipped on reels, and when unrolled the spring of the wire causes it to straighten out, its rigidity being equal to that of a piece of band iron of equal section. This feature will appeal to any one who has ever tried to use ordinary twisted wire in any form of arch construction.

*Fifth.* It can be cut to proper lengths on the job by hand shears to fit the varying spans between the beams.

*Sixth.* On account of the metal being used in two cables and connecting wires, it occupies less horizontal

space than if all the wires were twisted into one cable, thus permitting the use of a narrower vertical mortar joint than would be possible with one cable.

*Seventh.* On account of its peculiar construction, and by exposing a large amount of surface to the mortar, the bond between the cement and the wire cannot readily be broken by sudden jars or vibrations in the arch, as is the case where any form of smooth bars is used.

*Eighth.* On account of the openwork construction of the metal, soft mortar readily flows around all the wires, thoroughly embedding them and also forming a continuous mortar joint through the truss connecting the terra-cotta blocks on either side. Where flat band irons are used, it being very difficult to keep the bar exactly in the center of the joint, it is impossible in setting to get the mortar between the bar and the block, where one side of the bar is in contact with it, thus getting only one-half the efficiency of the metal construction.

"NEW YORK" REINFORCED TERRA-COTTA ARCH. SIX-INCH END CONSTRUCTION BLOCKS—DOUBLE TRUSS, CARRYING SIXTEEN HUNDRED POUNDS PER SQUARE FOOT ON SIX-FOOT SPAN BY FIVE FEET WIDE.

*Ninth.* It is a well-known fact that Portland cement is the best preservative of steel known. For this reason the wire will last indefinitely to its full efficiency, which is not the case where light sections of steel are used in cinder concrete, plaster Paris or similar compositions.

The arch which was tested was six inches deep and for a span of six feet between beams, but the same principle can be applied to wider spans by increasing the depth of the arch blocks and increasing the thickness of wires, or by increasing the number of them in each joint.

Where the span between beams would be so great that the blocks would tend to shear off near the beams, this tendency is overcome by turning up the ends of some of the trusses, as shown in the drawings, while keeping the center down to the bottom of the arch, where the greatest tensile strength is required. Various methods are shown in the drawings for supporting the ends of the arches, but these are not peculiar to this arch.

The cost of this arch is but slightly more than the ordinary six-inch end construction arch. The permit issued by the New York Bureau of Buildings allows it to be used for a live load of one hundred and fifty pounds per square foot. The photographs show the test house required by the New York regulations and the weight carried after the test. The drawings show, more clearly than any description, the form of the wire truss used and the method of its application.

The truss is placed on edge and runs from beam to beam in the vertical joint between adjoining blocks, the joint being about one-half inch wide and the mortar well grouted around the wires.

The experimental development of this construction to wide spans is being carried on, but the results are not yet ready for publication. There seems to be no question as to the possibility of using it up to about sixteen feet between supports for light loads. Made of porous terra-cotta, it would make an ideal roof construction.

## THE CONCRETE DANGER.

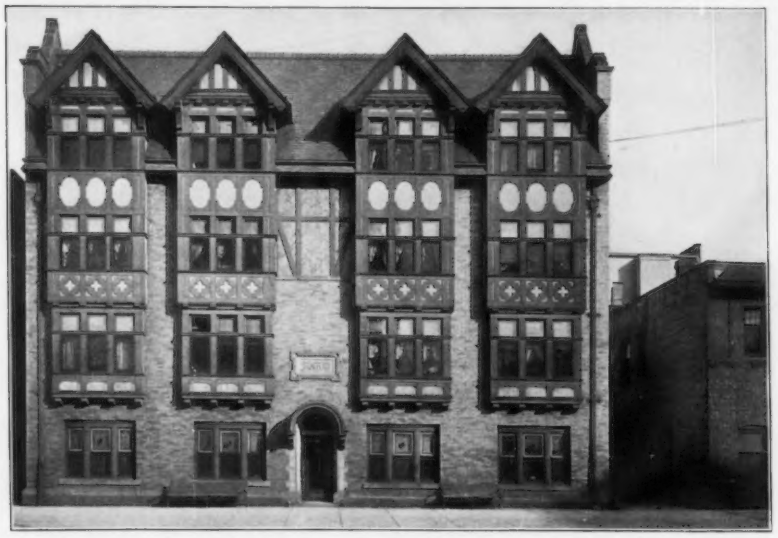
IN justice to the community there ought to be a decided stand taken by every one who is interested in security of construction, in permanence of building, against such concrete work as we are hearing so much of nowadays. A short time since the floors of a courthouse in eastern Illinois collapsed almost without warning. Concrete. A flooring which was being installed in a large manufacturing plant at Trenton, N. J., collapsed on December 8 under a test, and a big section of it fell from the third story through the second and third floors to the basement, killing two men, narrowly missing forty others and doing twenty thousand dollars' worth of damage. Concrete. A few days before, in a large new apartment in Pittsburg, sections of each of the floors were totally destroyed by the giving way of a section of the false work on the roof. One man was killed, two hundred and fifty men were in peril of their lives and many thousand dollars' worth of damage resulted. The roof fell, taking with it all the lower floors through to the basement. Some of the floors had been in place about five months. The construction consisted of expanded metal and cinders concrete in bays of about 16 x 20 feet between beams. Concrete again. And so the tale might be extended. The number of concrete constructions which have absolutely collapsed within a single year is certainly appalling. Of course their failure was due to poor workmanship or poor design. So is everything untoward which happens, but that constitutes a very poor defense of a weak system. The fact that other systems fail occasionally is no excuse for the use of a concrete which not merely has failed under greatly varying circumstances, but has been shown again and again to be lacking in the very quality for which it is chiefly designed. Why a construction which is unsafe, which does not guard against fire, which has killed scores of unsuspecting workmen, should be used by any intelligent architect or builder who can read and use his senses is one of the mysteries which is by no means fully explained by any statement that it is cheap. We do not condemn concrete altogether. In its way and in its place, for some purposes, it is the most admirable material which the builder has at command, but we have yet to see any system of concrete floor or column construction which in our judgment is fit to be trusted in any building.

# Selected Miscellany.

## PROFESSOR WILLIAM R. WARE.

ON the twenty-eighth of November a dinner was given to Professor William R. Ware at the Tavern Club, Boston, by a number of his former students in Boston and New York. The occasion was a most enjoyable one in every respect. Professor Ware has been before the architectural profession as its foremost teacher for thirty-five years, and during that time he has sent out to practise architecture something over six hundred pupils, without counting those whom he could fairly

PANEL BY BEEZER BROTHERS, ARCHITECTS.
Northwestern Terra-Cotta Co., Makers.



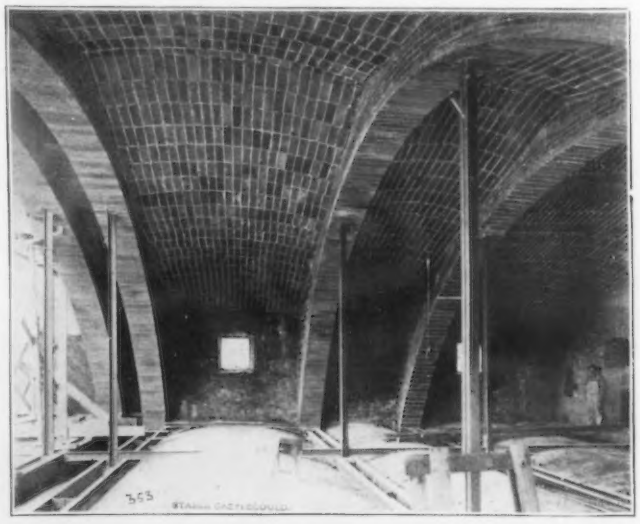
STRATFORD APARTMENT, CLEVELAND, OHIO.
William R. Watterson, Architect.

DETAIL BY HERTS & TALLANT, ARCHITECTS.
Perth Amboy Terra-Cotta Co., Makers.

style his architectural grandchildren to even the second and third generations. Shortly before the war Professor Ware in company with Mr. Gambrell Mr. Post and a few others, studied in the New York studio of the late R. M. Hunt. Immediately after the war he opened an office in Boston and gathered around him a few earnest young men, of whom we only mention such names as John G. Stearns, Professor F. W. Chandler and Robert S. Peabody, to show the character of those who were attracted by Professor Ware's personality and his ability to inspire all who came in contact with him. The Institute of Technology was started in the late sixties, and owes its present high character almost entirely to the foundations Professor Ware laid so well, and when later he was called to Columbia his influence speedily brought the New York school to a very high rank. He has practically set the standard throughout the country for architectural education. John A. Mitchell, of *Life*, was one of Professor Ware's earliest students who has abandoned architecture. Another has made a fortune in running moderate-priced lunch-rooms in Boston and New York. There were others still who for various reasons did not pursue architecture as a profession, but the greater portion of those who once came under Professor Ware's influence have held fast to the mother art and have risen to some of the highest positions in their profession.

## TESTS OF ARCHITECTURAL TERRA-COTTA.

Unquestionably a series of tests which would determine the bearing capacity of architectural terra-cotta would meet a long-felt want among architects. Such tests should begin with the crushing weight of solid and cellular blocks of various sizes, the latter being submitted to separate tests as to their relative strength when filled and when left



VIEW OF MASONRY ROOF GIRDERS AND ROOF AND FLOOR CONSTRUCTION OF STABLE FOR HOWARD GOULD, ESQ. BUILDING ABOUT FOUR HUNDRED FEET LONG. GUASTAVINO CONSTRUCTION THROUGHOUT.

unfilled. Following these should be a test of self-supporting arch lintels, spanning apertures of varying widths, with voussoirs of different depths and with reveals of from four to twelve inches. After this might come sections of columns of widely different diameters up to the limit allowable in single drums and then up to say three feet diameter, made in sections and filled with the customary brick backing. Such tests, to be conclu-

DETAIL BY W. B. TUBBY & BROTHER, ARCHITECTS.
Standard Terra-Cotta Works, Makers.

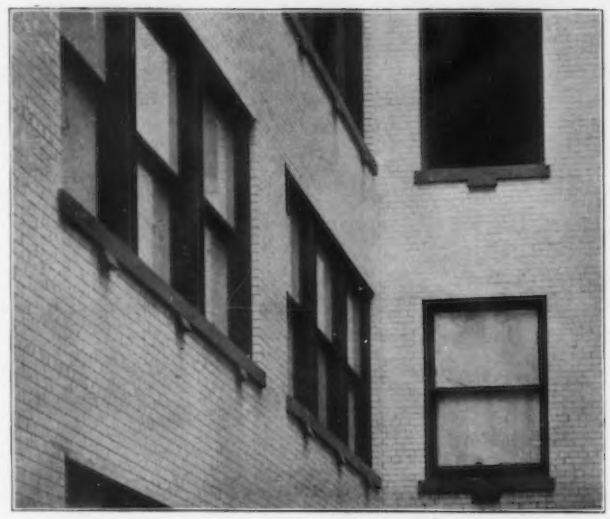
sive, should be thorough in character, comprehensive in scope and exhaustive in point of tabulated analysis.

The practical results of such a series of tests would be of unquestionable benefit alike to purchaser and producer, or — to bring it more directly under the eyes of those immediately concerned — let us say the architect and terra-cotta maker. The former is often in doubt as to what would be a safe load, from which he takes refuge in one

DETAIL BY CLINTON & RUSSELL, ARCHITECTS.
Excelsior Terra-Cotta Co., Makers.

of two alternatives. He introduces iron support, sometimes where it is not really wanted or necessary, so as to be "on the safe side," or he abandons his previous intention of using terra-cotta, substituting stone lintels, and in the case of columns uses granite or cast iron.

The data resulting from such tests would be highly reassuring to a man otherwise favorably disposed towards



LIGHT SHAFT, METROPOLITAN LIFE INSURANCE COMPANY BUILDING, NEW YORK.
Lined with Blue Ridge White Enamel Brick.

the use of terra-cotta, and in this category most of our best architects may be included. Thus would arise an increasing demand for terra-cotta to be placed in situations formerly reserved for other materials. Those who had not used it before would feel warranted in doing so after its strength had been demonstrated, while those who had always used it would continue to do so more extensively than before.

---

Robert W. De Forest, the Tenement House Commissioner of New York City, has transmitted to Mayor Low

LOWER PART OF WYLLYS BUILDING, PLATT AND WILLIAM STREETS, NEW YORK.
Front brick made by Kreischer Brick Manufacturing Co.

the first report of New York's new Tenement House Department. In it he says:

"On January 1, 1902, a new department of the city government, known as the Tenement House Department, was created. Since that time all tenement houses in New York have been examined and their condition ascertained.

"Tenement conditions in many instances have been found to be so bad as to be indescribable in print: vile privies and privy sinks; foul cellars full of rubbish, in many cases of garbage and decomposing fecal matter; dilapidated and dangerous stairs; plumbing pipes containing large holes emitting sewer gas throughout the houses; rooms so dark that one cannot see the people in them; cellars occupied as sleeping places; dangerous bakeries without proper protection in case of fire; pigs, goats, horses and other animals kept in cellars; dangerous old fire traps without fire escapes; disease-breeding rags and junk stored in tenement houses; halls kept dark at night, endangering the lives and safety of the occupants; buildings without adequate water supply; the list might be added to almost indefinitely.

"The cleansing of the Augean stables was a small task compared to the cleansing of New York's 82,000 tenement houses, occupied by nearly three millions of people representing every nationality and every degree in the social scale.

LOGGIA, HOUSE AT THOMPSON, CONN.

STABLE OF HOUSE AT THOMPSON, CONN.
Shepley, Rutan & Coolidge, Architects.

DETAIL BY V. HUGO KOEHLER, ARCHITECT.
New Jersey Terra-Cotta Co., Makers.

"The task that confronted the department was not, however, limited to this. Without organization, without employees, with all its problems before it, it was on the very day that it came into existence confronted with an organized and vigorous attack in the Legislature upon the fundamental principles of the law for whose enforcement it was created.

"Without previous records, with almost no information in regard to the condition of the existing tenement

DETAIL BY HOWELLS & STOKES, ARCHITECTS.
Atlantic Terra-Cotta Co., Makers.

houses, it was called upon to carry out an important and far-reaching scheme for their improvement, involving the structural alteration of over 40,000 buildings.

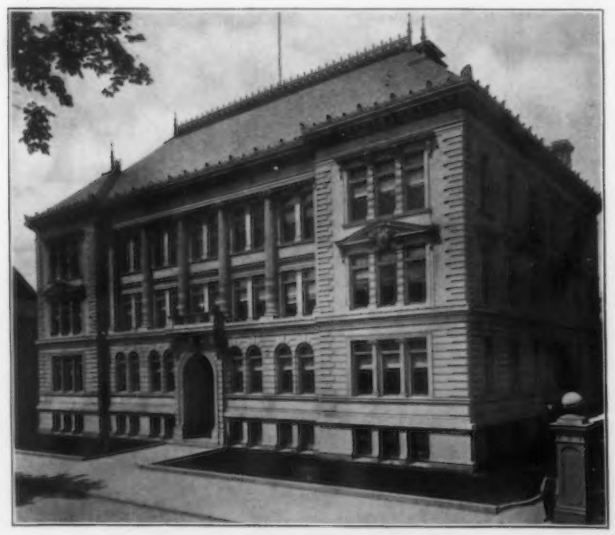
"In the period under consideration in this report a new branch of the city government has been organized, its machinery created and a force of about four hundred employees trained, disciplined and educated; far-reaching and important advances in legislation have been secured as a result of the department's action, and radical and vicious attempts to break down the tenement laws defeated.

"Living accommodations for 16,768 families, or 83,840 persons, have been provided in sanitary, comfortable and decent houses, each one of which has been built according to law; notorious evasion of and non-compliance with the laws have given place to their complete, uniform and impartial enforcement; the evil of prostitution has been practically abolished in the tenement houses;

DETAIL BY BORING & TILTON, ARCHITECTS.
Conkling-Armstrong Terra-Cotta Co., Makers.

337,246 inspections have been made; 55,055 violations filed; 21,584 repairs made to plumbing; 13,617 water-closets cleaned; 11,611 accumulations of filth removed from cellars and other parts of such buildings; 13,732 ceilings cleaned; 15,364 walls cleaned; 10,060 unsafe wooden floors removed from iron fire escapes, and new iron floors substituted; 1,701 fire escapes erected on buildings that before were without this protection.

"The registration of 44,500 owners' names has been

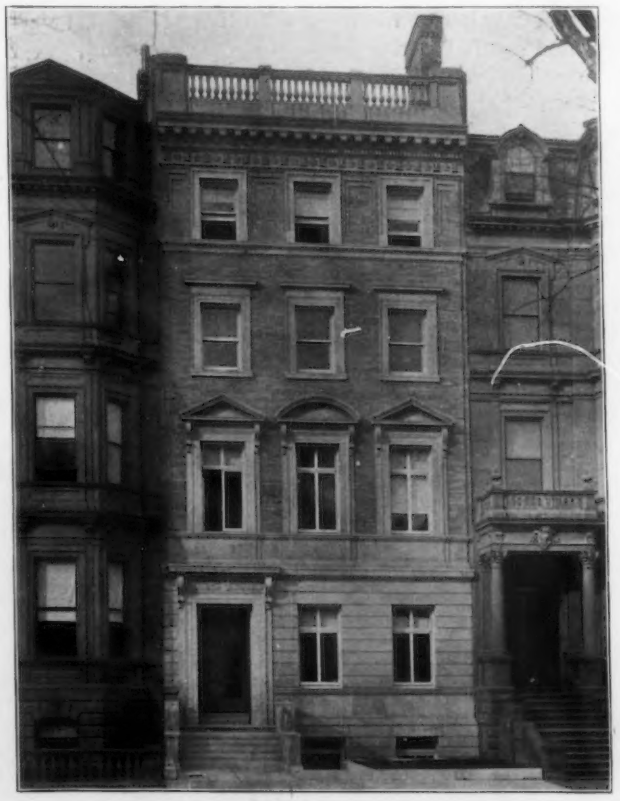


HIGH SCHOOL, TROY, N. Y.
M. F. Cummings & Son, Architects.
Terra-Cotta furnished by New York Architectural Terra-Cotta Co.

ST. MARGARET'S HOSPITAL, PITTSBURG, PA.
Ernest Flagg, Architect.
Roofed with eight-inch Conosera Tile made by Celadon Roofing Tile Co.

secured, thus fixing the responsibility for bad conditions in the tenements; contagious disease has been checked and prevented; 32,825 citizens' complaints have been investigated and the conditions complained of remedied; and an important tabulation and presentation of the population in every tenement house block in the Borough of Manhattan has been prepared that will be of incalculable value to the city.

"The existing tenement houses have been frequently and systematically inspected; foul cellars have had the accumulated filth of years removed; defective and unsanitary plumbing, which has apparently existed for long periods, has been remedied; houses unfit for human habitation vacated; hundreds of houses have been radically reconstructed and improved; light has been let into dark rooms; vile yard privies and privy sinks have been removed, and the whole sanitary condition of the city raised to a higher standard. The results of this work are clearly reflected in the reduced death rate, which in 1902 was 18.7 as compared with 20 in 1901, and in the first eight months of 1903 has been reduced to 18."

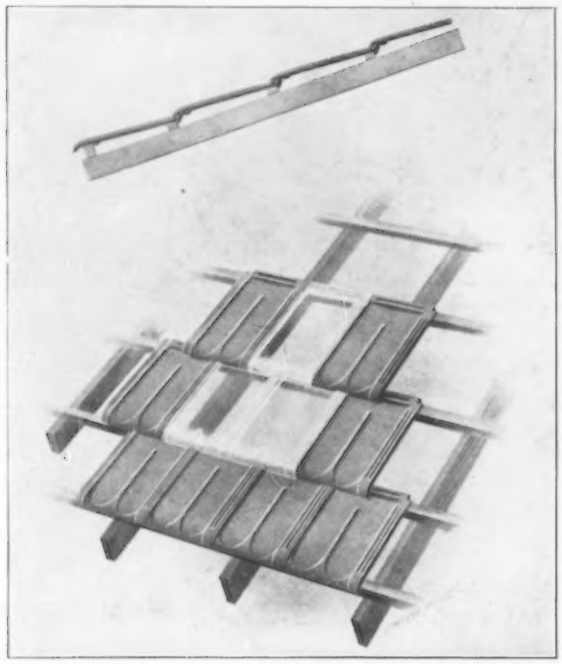


HOUSE, COMMONWEALTH AVENUE, BOSTON.
Peabody & Stearns, Architects.
Built of Sayre & Fisher Co. Brick.

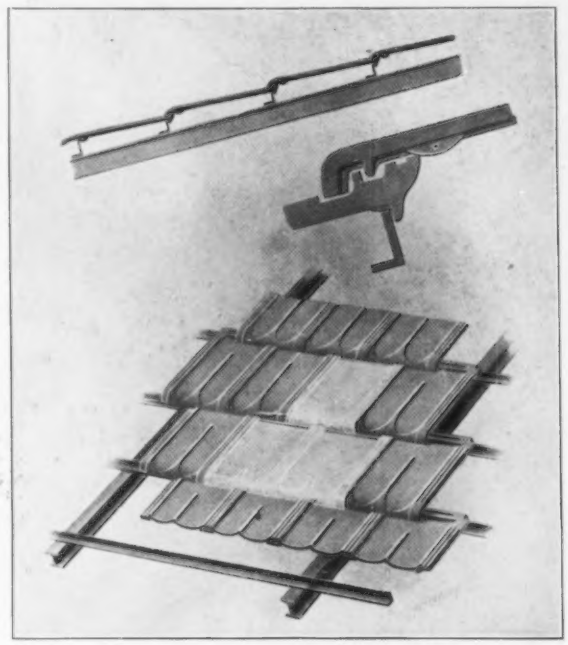
## ROOFING TILES.

Many years ago we had the interesting experience of measuring the central tower of the Cathedral at Toro, Spain. Our only means of access to the tower was by climbing ladders set against the walls of the nave and thence walking across the low pitch roof, which was covered with the light red semi-cylindrical roofing tiles which are so interesting a feature of Spanish architecture. We would not dare to say how many of these frail coverings were broken beneath our rough American

shoes, but we heard them cracking at every step. When tiles were first introduced to this country they were unfortunately many of them quite as friable as the soft



RED CLAY ROOFING TILES WITH INTERCHANGEABLE GLASS TILES ON WOODEN CONSTRUCTION.



RED CLAY ROOFING TILES WITH INTERCHANGEABLE GLASS TILES ON IRON CONSTRUCTION.

Henry Maurer & Son, Manufacturers.

Spanish tiles, and a considerable prejudice existed against them for a long time. But the construction of roofing tiles has been brought to a very high state of perfection of late years, until now the market affords most excellent tiles which compare very favorably with those which are manufactured abroad as to color and texture, and are at the same time extremely durable, so that if properly applied a tile roof need cause very little trouble from repairs. One of the most annoying sources of trouble in a tile roof is the joints about the skylight and the difficulty of making the glass tight without building an unpleasing frame to project from the surface of the tiling. This difficulty, however, is obviated by the use of clear glass tiles, which can be had of shapes and sizes identical with the red tiles, through which light is admitted to any required extent. For factories, stations and railroad sheds these tiles, with the glass set in, give a very handsome roof, requiring the minimum of repair.

## NOTES.

The Boston Architectural Club held during this month an exhibition and sale of sketches and water colors which were donated to the club by members and friends. Among them were drawings by C. Howard Walker, R. Clipston Sturgis, R. S. Peabody, Dwight Blaney, W. G. Preston, H. B. Pennell, William R. Emerson, R. D. Andrews, George F. Newton, S. W. Mead, E. F. Maher, H. P. White and others. The proceeds of this sale will be devoted to the benefit of the class and scholarship funds of the club.

We have received the catalogue of the second annual exhibition of the San Francisco Architectural Club. It is interesting, particularly, because of the work of the local men which is illustrated, and further as indicating that the club seems to be in a healthy and prosperous condition. About three hundred drawings were exhibited.

Mr. F. W. Fitzpatrick has opened offices as consulting architect in Washington, New York, and Chicago. He stands ready to supply a long-felt need on the part of many architects who will be glad to know of some one to whom they can turn when the office force is inadequate and there are not enough hands to do the work, or when special emergencies call for a kind of experience entirely outside of ordinary practice. Mr. Fitzpatrick has associated with him a corps of most eminent specialists.

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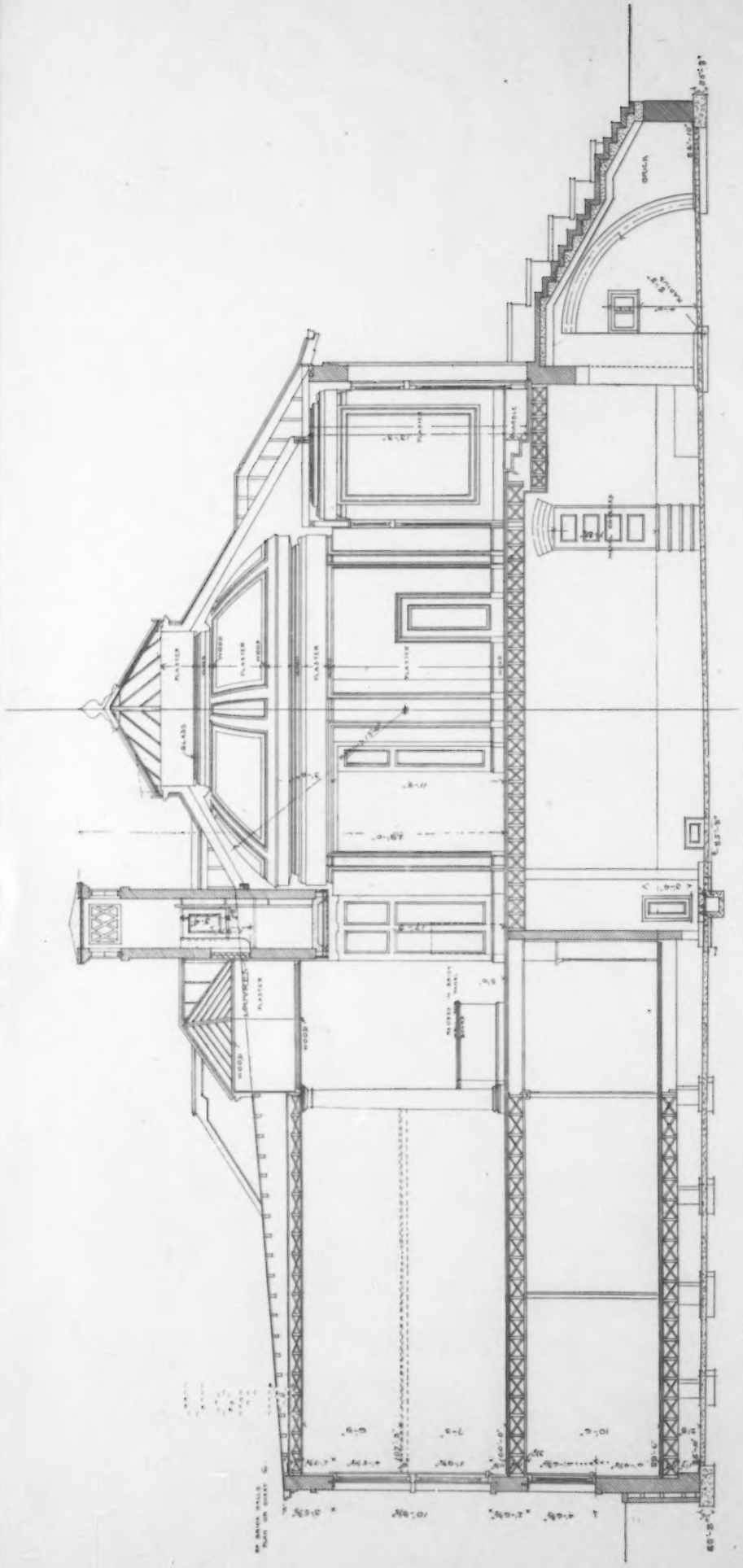
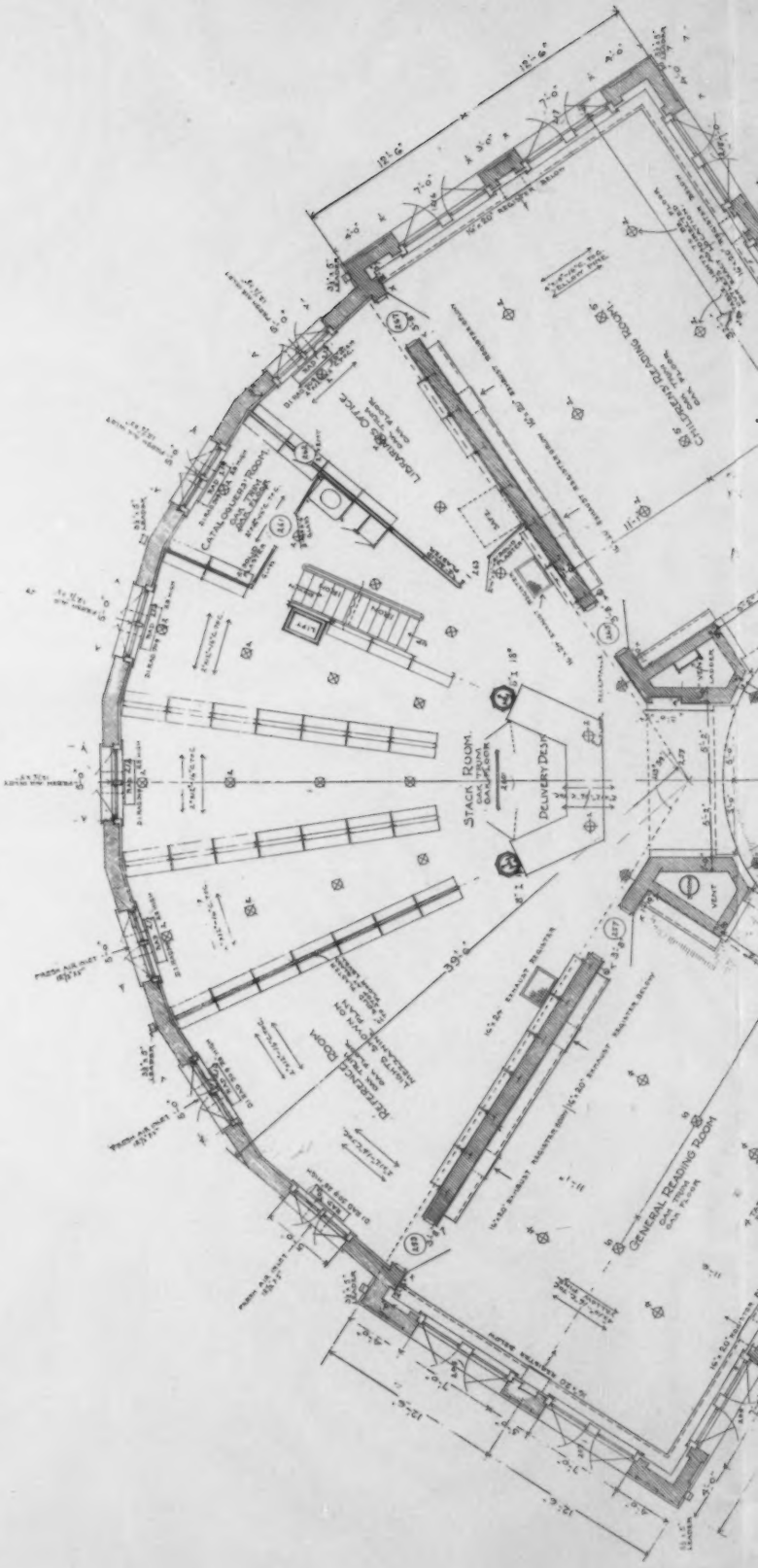
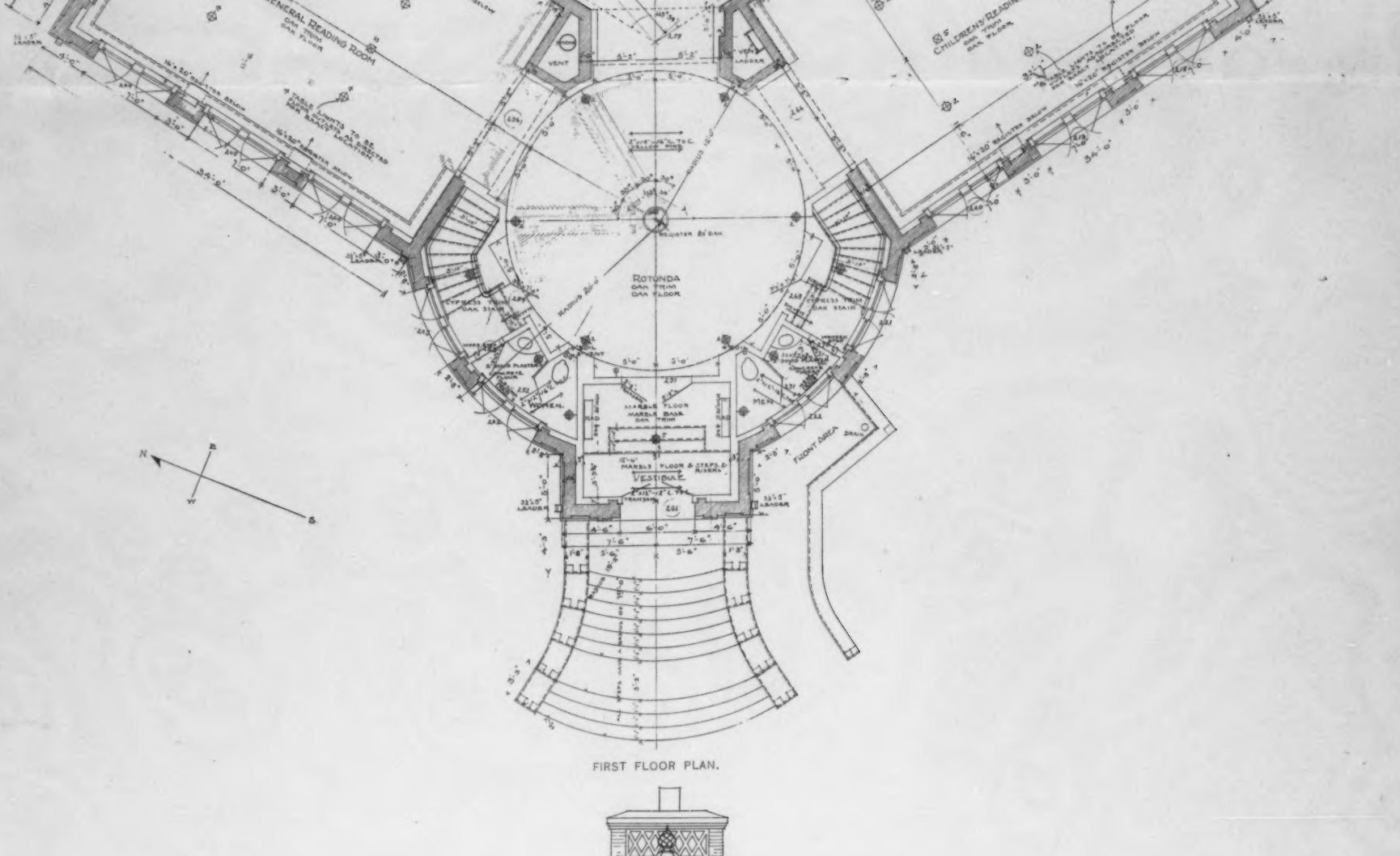
at Armour Institute of Technology CHICAGO, ILL.

M 101



LONGITUDINAL SECTION.

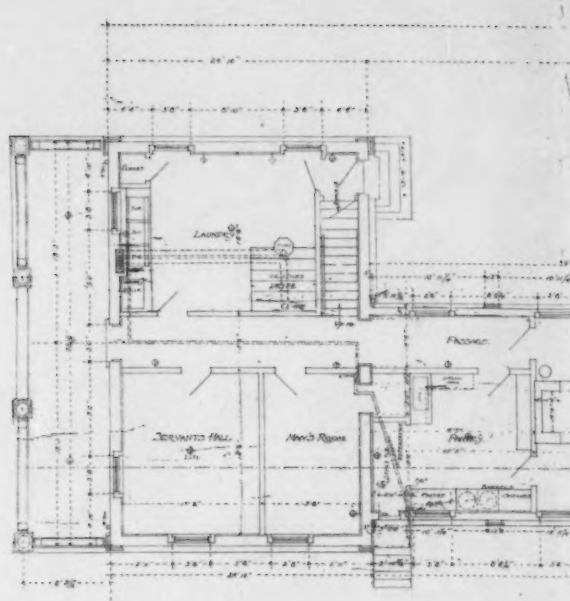


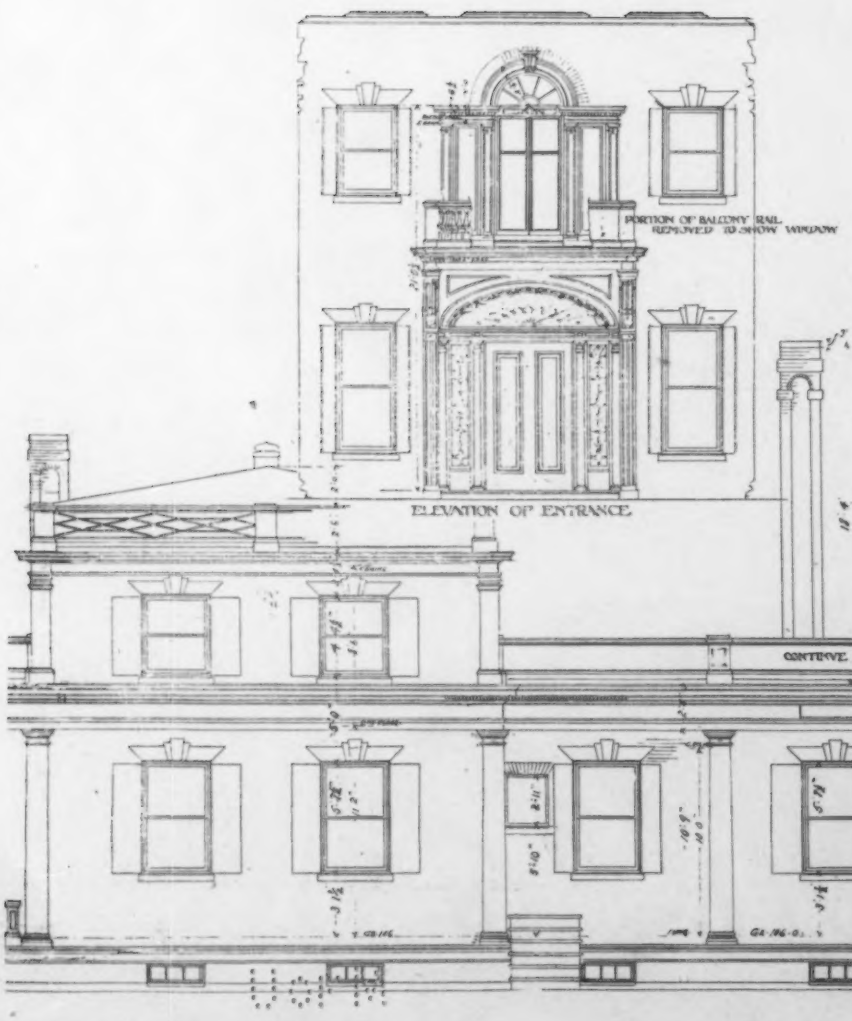



FIRST FLOOR PLAN.

FRONT ELEVATION.

PUBLIC LIBRARY, MONTCLAIR, N. J. JOHN GALEN HOWARD AND D. EVERETT WAID, ARCHITECTS.

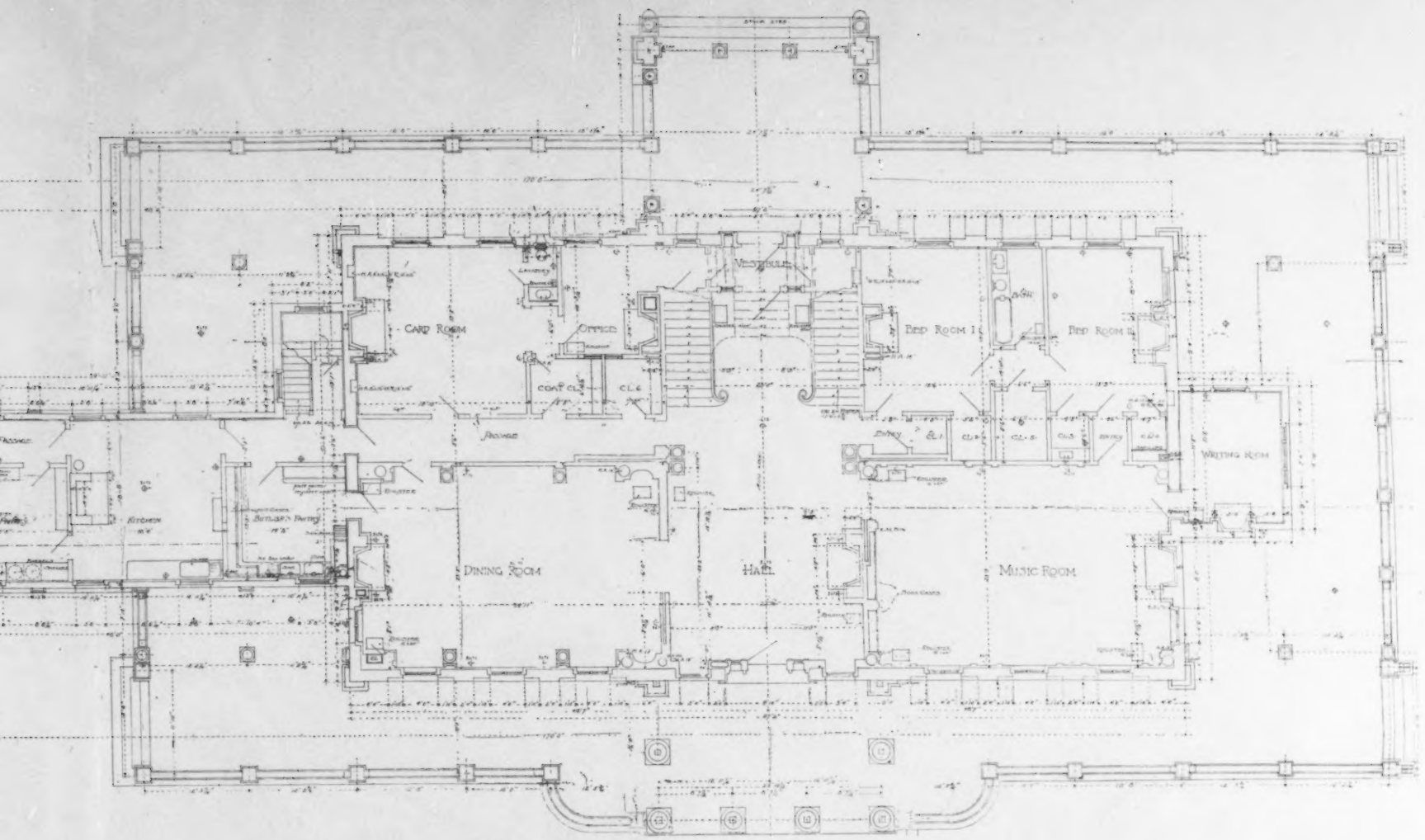



FRONT ELEVATION AND PLAN.

SHEPLEY, RUTAN & Co

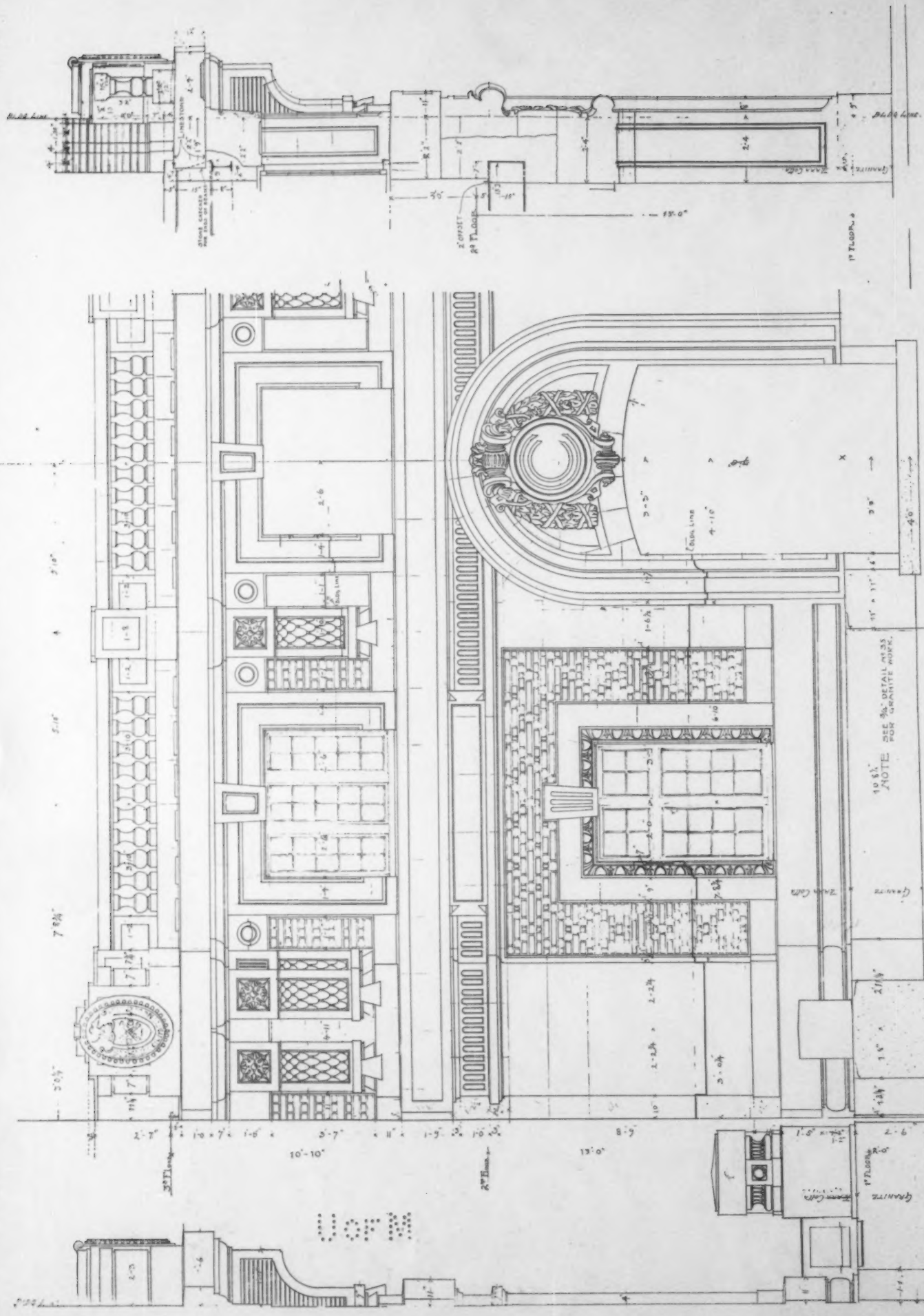
PLATES 90 and 95.



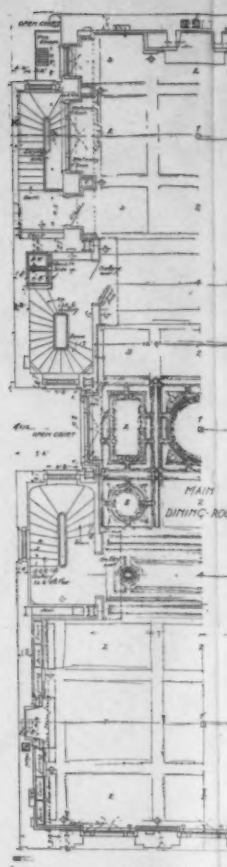

FIRST FLOOR PLAN.

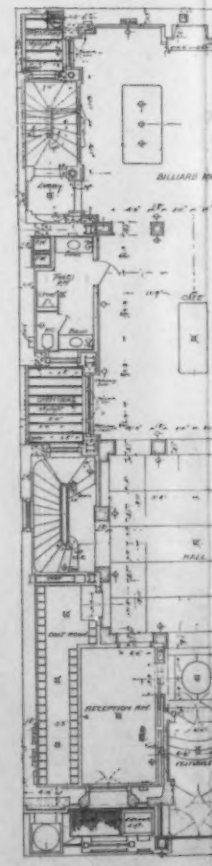
ND PLAN, HOUSE AT THOMPSON, CONN.

Y, RUTAN & COOLIDGE, ARCHITECTS.



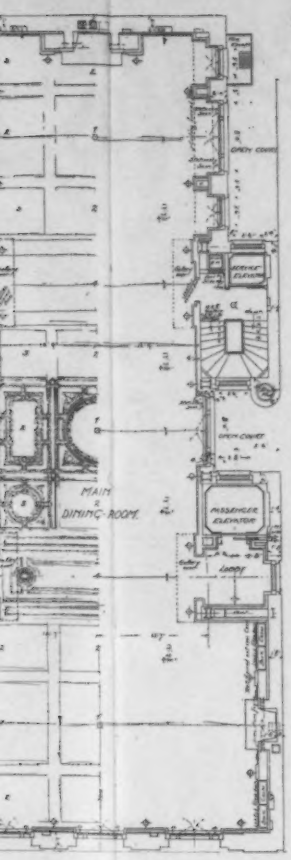

DETAIL, FIRST AND SECOND STORIES.



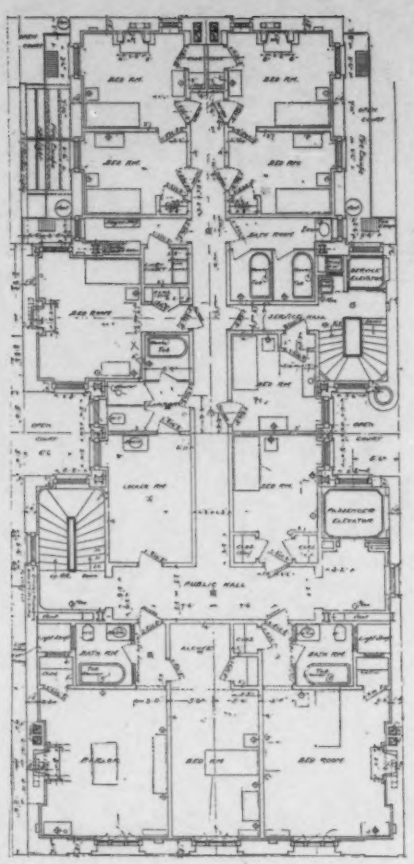




CITY CLUB, 55 AND 57 WEST 44TH STREET.

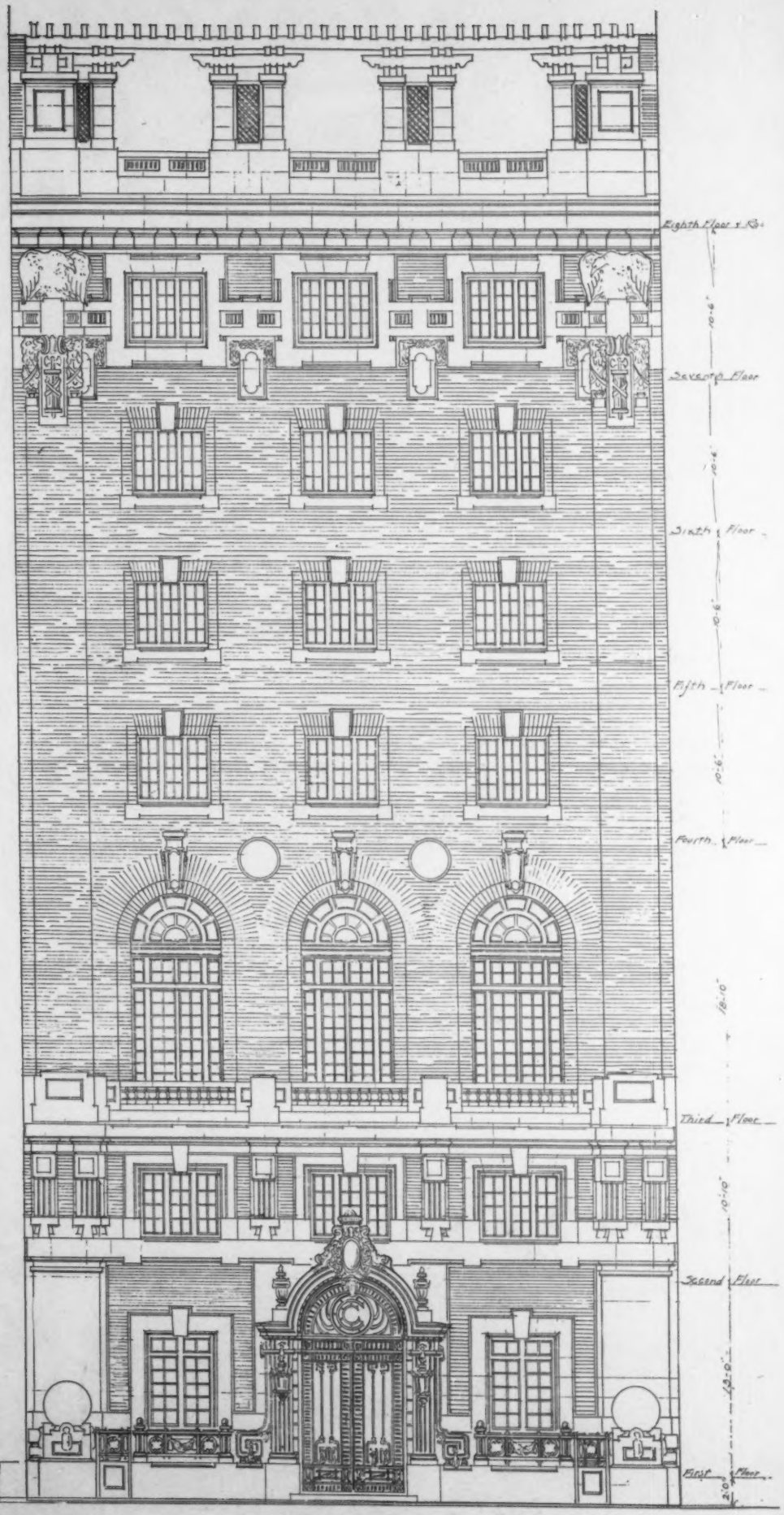
PLATES 91 and 94.



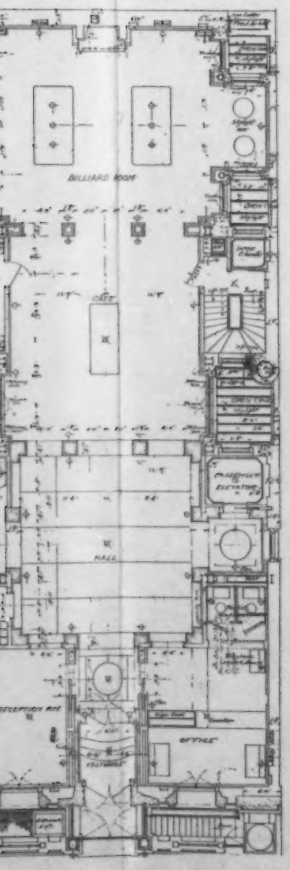

THIRD FLOOR PLAN.



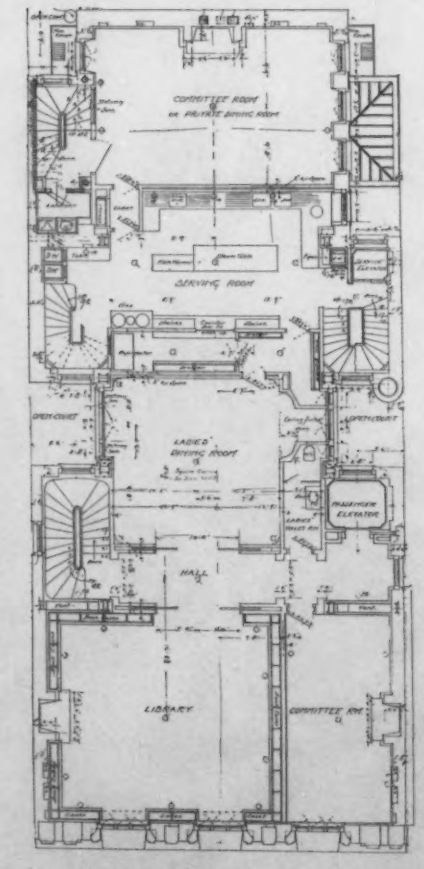

FOURTH FLOOR PLAN.




FRONT ELEVATION.

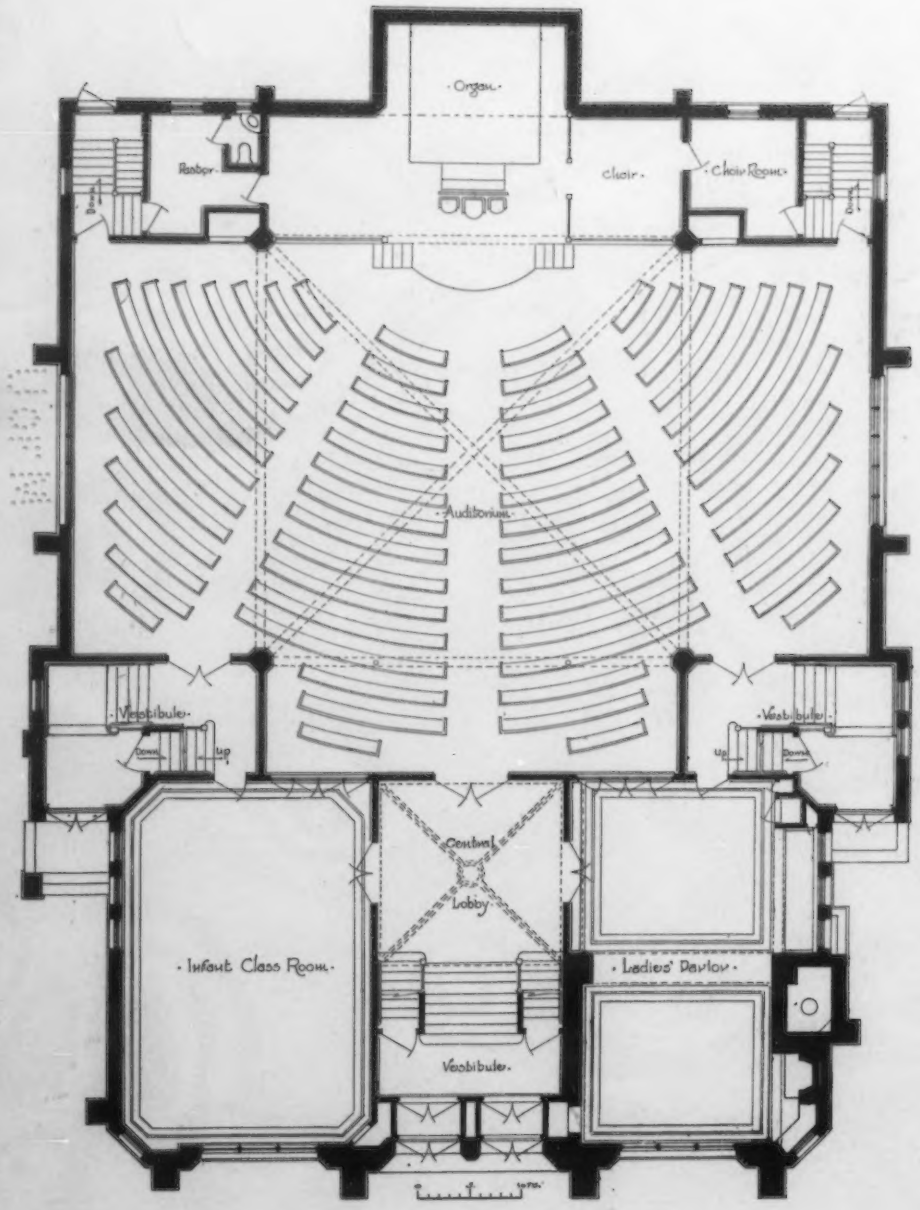



FIRST FLOOR PLAN.

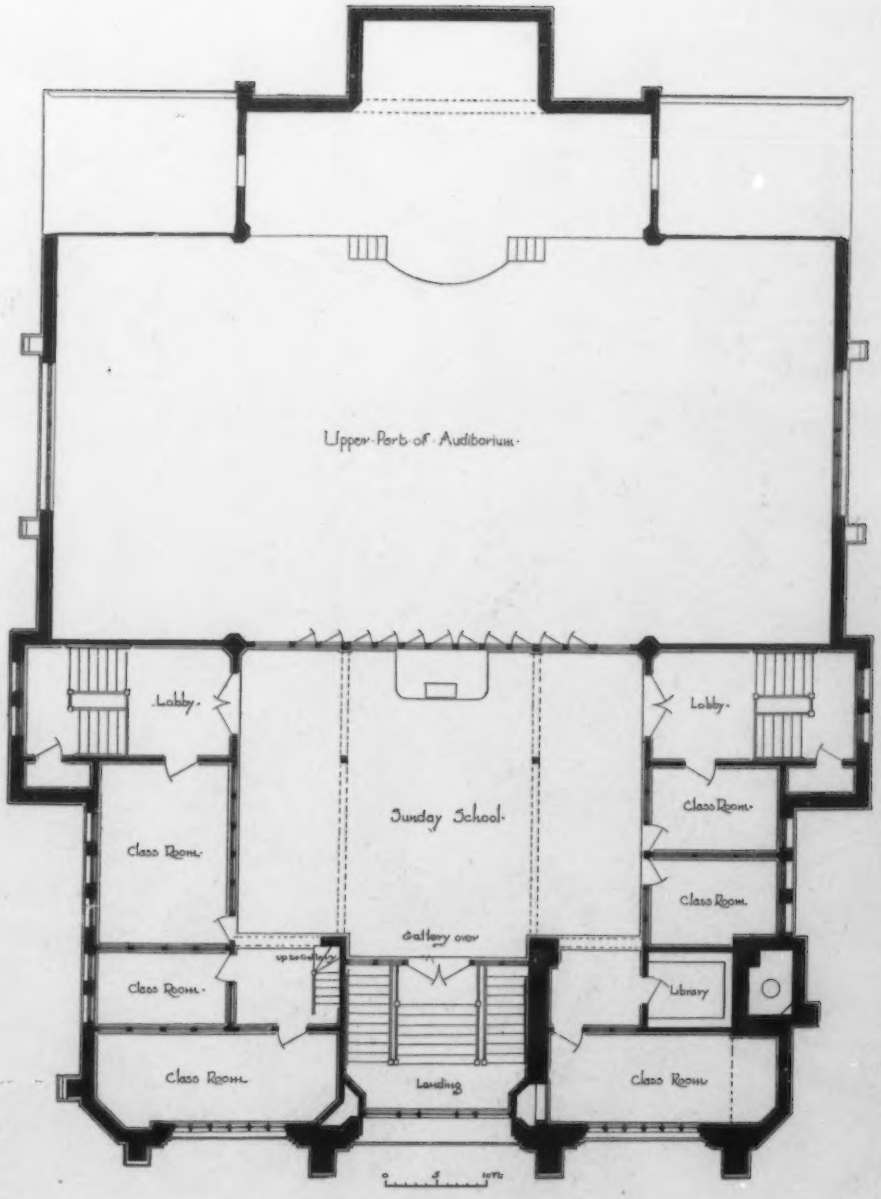



SECOND FLOOR PLAN.

I STREET, NEW YORK CITY. LORD & HEWLETT, ARCHITECTS.




FIRST FLOOR PLAN.



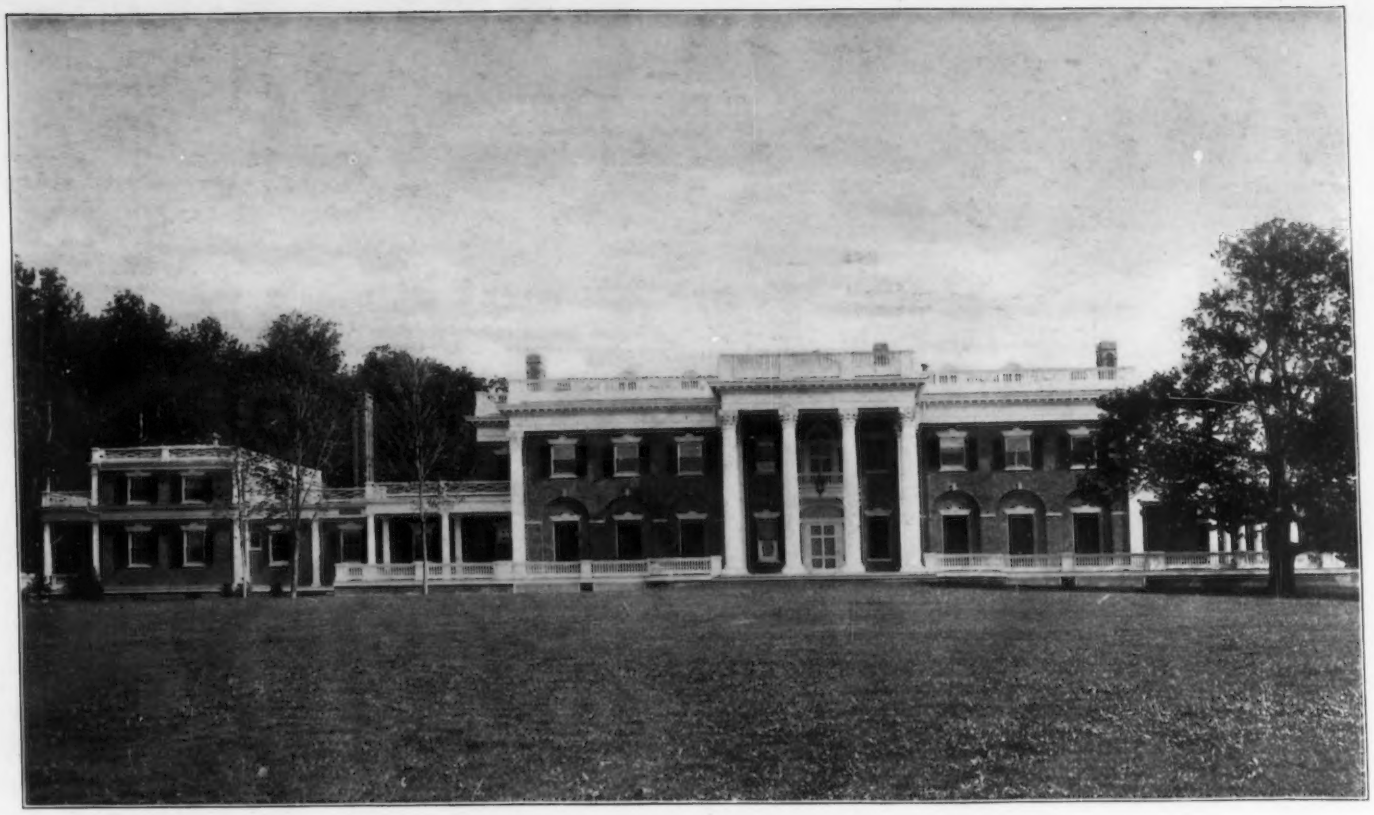

SECOND FLOOR PLAN.

SECOND CONGREGATIONAL CHURCH, ATTLEBORO, MASS.

GEORGE F. NEWTON, ARCHITECT.

THE AUDITORIUM IS PLACED IN THE REAR, WITH THE SOCIAL AND SUNDAY SCHOOL ROOM IN FRONT, TO FORM A BARRIER AGAINST THE NOISE OF PASSING RAILWAY TRAINS.

ПОЛИ



FRONT OF HOUSE.

REAR OF HOUSE.

HOUSE AT THOMPSON, CONN. SHEPLEY, RUTAN & COOLIDGE, ARCHITECTS.

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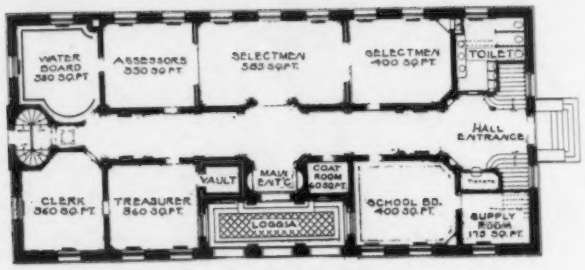
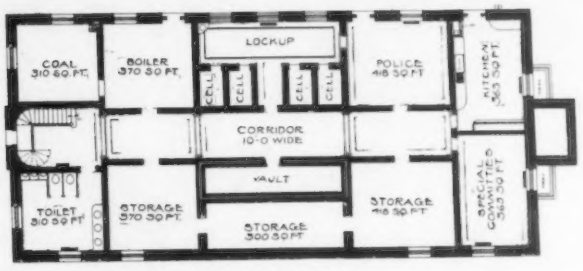
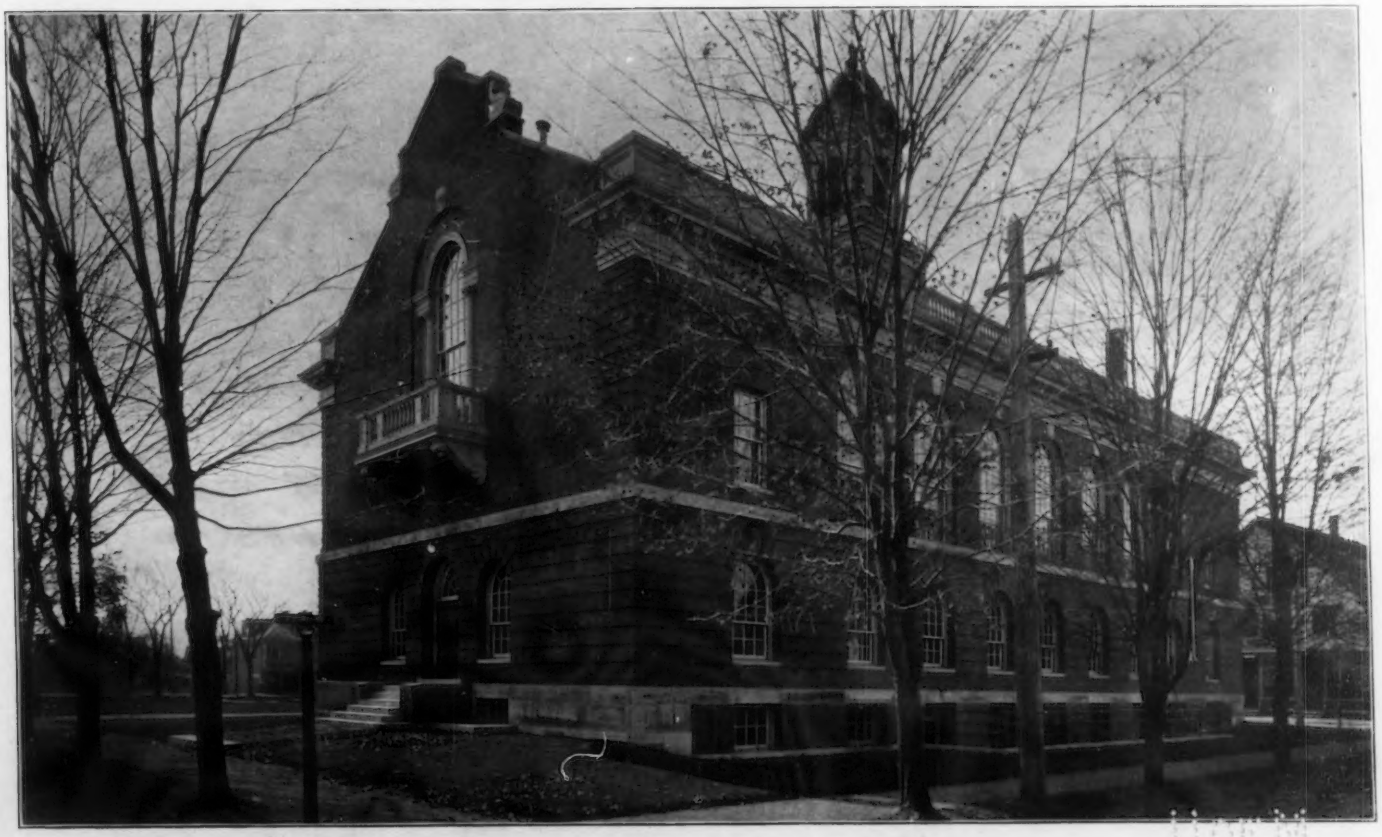



FIRST FLOOR PLAN.




BASEMENT PLAN.



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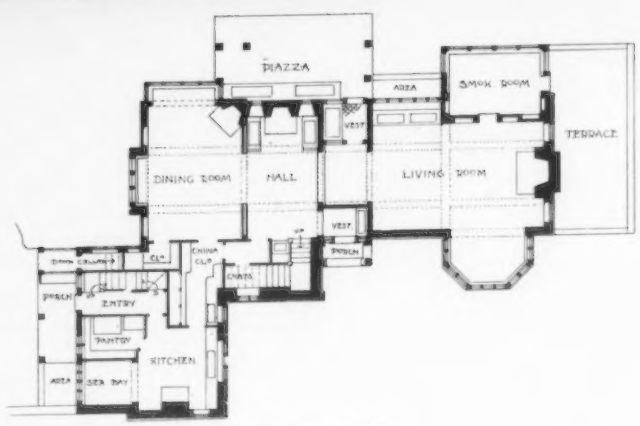


FIRST FLOOR PLAN.

SECOND FLOOR PLAN.

HOUSE, DES MOINES, IOWA. WILLIAM G. RANTOUL, ARCHITECT.

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| Babb, Cook & Willard | House, Bayville, L. I | 1 | July |
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| Boring & Tilton | Casino, Brooklyn, N. Y | 1 | August |
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| Burnham, D. H. & Co. | Railway Station, Richmond, Ind | 1 | April |
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| Warren, Smith & Biscoe | Design for Foundry M. E. Church, Washington, D. C. | 1 | January |
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# THE BRICKBVILDER
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From Work of HOWARD & WAID, LORD & HEWLETT, GEORGE F. NEWTON, WILLIAM G. RANTOUL, SHEPLEY, RUTAN & COOLIDGE, WINSLOW & BIGELOW

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